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UNIVERSITY University of ALBERTA

DEGREE FOR WHICH THESIS WAS PRESENTED Ph.D

YEAR THIS DEGREE GRANTED 1973

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CHILDREN'S UNDERSTANDING OF WRITTEN METAPHOR

by

© John William Alexander Smith

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF ELEMENTARY EDUCATION

EDMONTON, ALBERTA

FALL, 1973

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "CHILDREN'S UNDERSTANDING OF WRITTEN METAPHOR" submitted by JOHN WILLIAM ALEXANDER SMITH in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

Forty grade 6 and forty grade 8 children were presented with ten metaphors, each embedded in a sentence or paragraph. Their verbal retrospections to the metaphors were examined and categorized a posteriori. The verbalizations were classified into four main categories:- Irrelevant, Translation, Interpretative and Elaborative responses. Within each category a number of sub-categories were found. The most frequent response was the interpretative response and the next most frequent response was the elaborative response. Irrelevant and translation responses were comparatively infrequent. More correct than incorrect responses were made. Inferences were made mainly through the context rather than through personal experience. Elaborations were of a concrete imagery type rather than affect or evaluation. Grade 8 children made more higher level interpretative and elaborative responses than grade 6 children.

The Associated Commonplaces test was devised by the author from Black's theory of metaphor. Children were asked to select the appropriate commonplaces for a metaphor out of a list of words. The test elicited four main categories of response. At the simplest level was the choice of unrelated words, and at the most complex level was the choice of appropriate commonplaces with a rationale for the choice. The majority of children responded to the Associated Commonplaces test at the most complex level. Grade 8 children chose more higher level responses than did grade 6 children.

The verbalization data and the Associated Commonplaces data were correlated with children's scores on the Look at Literature test, a test of higher level critical reading ability. There was a positive relationship between overall verbalization scores, overall Associated

Commonplaces scores and Look at Literature scores, indicating that the ability to understand metaphorical language is associated with higher level reading skills.

The ten metaphors were submitted to a panel of judges to categorize them along four dimensions. There was relatively good agreement between judges on the dimensions of most of the metaphors. Comparing responses to the metaphors, however, produced rather inconclusive results. In general, simple, concrete, common and denotative metaphors were easier to understand than complex, abstract, unusual and connotative metaphors.

A descriptive Piagetian analysis of the poorest and best responses to the metaphors indicated that the poorest responses were associated with concrete, global, diffuse and undifferentiated schema and egocentric or transductive thinking. The best responses, on the other hand, showed flexible, abstract, differentiated schema and contained examples of hypothetico-deductive reasoning and propositional thought.

ACKNOWLEDGEMENTS

I wish to express my thanks to the members of my committee.

Dr. Marion Jenkinson, whose thoughtful support and guidance made this study possible; Dr. R. Jackson, Dr. W.H.O. Schmidt, Dr. W. Wilde, Dr. A. McKay and Dr. M. Horowitz also provided invaluable comments and advice. It was a priviledge to have Dr. Sam Weintraub act as my external examiner.

Thanks are also due to the staff at the Atlantic Institute of Education; to Mrs. Betty Osborne, Mrs. Joyce MacDonald and Mrs. Jane McCarthy for typing the various drafts of this thesis.

The co-operation of the Edmonton Public School system is gratefully acknowledged.

I can only begin to thank my wife Anne for her support and encouragement during the last two years.

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CHAPTER 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

> 'When I use a word', Humpty Dumpty said, in rather a scornful tone, 'it means just what I choose it to mean - neither more nor less.'
>
> 'The question is', said Alice, 'whether you can make words mean so many different things.'
>
> 'The question is', said Humpty Dumpty, 'which is to be master - that's all.'
>
> (*Alice Through the Looking Glass*, Lewis Carroll, p. 88)

Children's understanding of the manipulation and transfer of meaning which takes place in the metaphorical use of language is a matter of considerable importance to those of us who are interested in reading as a complex cognitive process. Just as Alice is puzzled by Humpty Dumpty's idiosyncratic and masterful control over words and their meanings, many children in our schools today are puzzled by the figurative use of language and do not appear to be able to obtain other than a strictly literal meaning from print. According to Knickerbocker and Renniger (1955), the minds of many children are shackled by their habits of reading at a literal level. However, they argue that "in most instances these shackles can be broken, that literal minds can be liberated" (p. viii).

The present author views the process of the "liberation" of children's reading of figurative and particularly metaphorical language as an important issue in education. Unfortunately educational research does not throw much light on the question of what kind of meaning children elicit from metaphors. Hence, it is hardly surprising that instruction in reading this kind of material has not always been effective. In order to provide a framework for rationalizing the process of instruction in reading beyond the literal level, it seems necessary to gain more information about children's comprehension of such material.

How well a child understands printed metaphor is in large part dependent upon the level of cognitive skill with which he approaches reading. In the present context, reading is taken to be a dynamic active process involving such factors as selection, analysis, integration and organization of information conveyed through the medium of print.

In order to investigate the complex cognitive process involved in reading metaphor, it seems necessary to take a somewhat different approach to the problem than has been taken in previous studies.

The nature of children's understanding of metaphor is a topic which as not been explored in any depth by educators. The studies of metaphor which have been done tend to use classroom-type tests, often multiple-choice, which lay strong constraints upon the type of response that children are encouraged to make. The limitations inherent in such methods persuaded the present author that a more fruitful approach would be to ask children to verbalize their understanding of written metaphors in a relatively free and unstructured situation. Such an approach, comparable to Piaget's "clinical interview" technique, seems to have potential for revealing, in depth, children's knowledge of metaphor. The writer wished to go further than merely measuring 'correct' and 'incorrect' interpretations of metaphor. The focus of research interest for this study lay in such questions as where Grade 6 and Grade 8 children's interpretations lay along the developmental path from crude undifferentiated thinking to hypothesizing, problem-solving and critical, creative thinking. It was hoped that by relying mainly upon 'free' verbalizations it would be possible to further examine how the reading of metaphors involves the selecting, eliminating, searching, manipulating and organizing activities which Goldman (1964) describes as the "processes of thinking".

Another limitation of many educational studies of figurative language has been the failure to provide an integrated theoretical framework for research. This study has used philosophical and psychological thought to devise a simple test of metaphorical understanding, to analyze the content of the metaphors and to interpret the responses that children gave to the metaphors.

I. PURPOSE OF THE STUDY

The primary purpose of this study was to investigate and compare the understanding that Grade 6 and Grade 8 children obtain from reading passages containing metaphor. The principal method of investigation was introspective-retrospective verbalizations produced in an extended interview situation, but also a test of metaphorical understanding was devised to examine the manner by which children select and transfer meaning in metaphor. Children's responses to metaphor were classified into categories following the collection of the responses, in order to avoid preconceived biases. The study also examined the relationship between children's verbalized responses to metaphor, and a test of higher level critical reading ability. Metaphors were classified into categories through the use of judges' ratings. Following the categorization and scoring of individual responses, a descriptive analysis of selected high and low scoring responses was carried out in the light of Piaget's developmental model.

II. DEFINITIONS

General Theoretical Terms Relating to Metaphor

Associated Commonplaces: The network of meanings or associations attached to both the subsidiary and main subject of a metaphor, from which appropriate associations are selected and combined to create a metaphor.

Main subject: The literal part of a metaphor to which the figurative part of a metaphor attaches meaning. For example, in the metaphor "Man is a wolf", "man" is the main subject. The main subject is synonymous with the "tenor" of a metaphor or the "focus" of a metaphor.

Metaphor: A figure of speech in which a word denoting one object or idea is used to add meaning to another object or idea through the similarities between the two as in "Man is a wolf". According to Black (1962), metaphor is the result of selecting appropriate associated commonplaces from a network of commonplaces attached to one subject (the subsidiary subject) and applying them to another subject (the main subject).

Subsidiary subject: The figurative part of a metaphor from which certain associated commonplaces are selected and attached to the main subject. In "Man is a wolf", wolf is the subsidiary subject. The subsidiary subject is synonymous with the "vehicle" of a metaphor or the "frame" of a metaphor.

Terms Relating to the Associated Commonplaces Test

Appropriate Associated Commonplace: Those associated commonplaces which are appropriate to both subsidiary and main subject of the metaphor; e.g., for the metaphor, "tongues of water", "curv[illegible]" is an appropriate associated commonplace.

Inappropriate Associated Commonplace: Those associated commonplaces which are associations for the subsidiary subject of the metaphor but which do not have relevance to the main subject of the metaphor; e.g., for the metaphor, "tongues of water", "foreign" is an inappropriate associated commonplace.

Unrelated Words: Those words on the *Associated Commonplaces* test which have no apparent relation to the subsidiary subject of the metaphor; e.g., for the metaphor, "tongues of water", "house" is an unrelated word.

Terms Relating to Measurement of Variables:

Category Scores: The number of responses falling into individual categories for both verbal retrospective categories and the *Associated Commonplaces* categories.

Overall Scores: The weighted scores for the verbal retrospective data and the *Associated Commonplaces* data, achieved by assigning different weights to different categories depending on the quality of the response, adding the responses, and multiplying each category by its weight.

Higher Level Responses: Responses of high quality, which have been assigned a weight of 2 or more. Characteristics of these responses are described in detail in Chapter IV.

Intermediate Level Responses: Responses of intermediate quality, which have been assigned a weight of 1.

Lower Level Responses: Poor quality responses, which have been assigned a weight of 0.

Terms Relating to Verbal Retrospective Data:

Irrelevant Responses: Responses which contain no ideas about the passages or metaphors, such as "Don't Know" responses.

Translation Responses: Responses which simply restate information stated in the passages.

Interpretive Responses: Responses which use material given in the passage in order to make inferences about the passage.

Elaborative Responses: Responses which elaborate and extend the meaning of the passages by suggesting descriptions, feelings or ideas about the passage.

III. QUESTIONS AND HYPOTHESES

Due to the descriptive nature of this study, it was not possible to form statistical hypotheses about all the questions of concern. Where statistical hypotheses are appropriate, they have been formed out of the questions which the study posed. Question 2, question 5 and question 8 were derived after the data were collected, but for the sake of the organization of this report, are included here with the questions and hypotheses formulated before the data were collected.

Question 1:

To what extent are children able to select and explain appropriate commonplaces for the main subject of a metaphorical statement from the network of associated commonplaces attached to the subsidiary subject and from unrelated words?

This question was answered by examining the totals, means and standard deviations of category scores on the Associated Commonplaces test.

Question 2:

To what extent are children able to explain passages containing metaphors? To what extent do children produce Irrelevant, Translation, Interpretive and Elaborative types of responses, and what proportion of these responses are High, Intermediate or Low level responses?

This question was answered by examining the totals, means, and standard deviations of category scores for verbal retrospection.

Question 3:

What is the nature of the relationship between children's ability to select an associated commonplace for a metaphor, their ability to verbalize the meanings of metaphors retrospectively and their performance on a multiple-choice test of critical reading and appreciation?

Research Hypothesis: Children who are able to produce high level responses to the Associated Commonplaces test will also tend to produce high level responses during verbal retrospection and will score higher on the Look at Literature test.

Null Hypotheses:

A. There is no significant correlation between the overall scores or the category scores of the Associated Commonplaces test with the overall scores or the category scores of the verbal retrospections.

B. There is no significant correlation between scores on the Look at Literature test and:

i. overall scores and category scores on the Associated Commonplaces test.

ii. overall scores and category scores for verbal retrospections.

Question 4:

How do Grade 6 and Grade 8 children differ in their ability to select and explain appropriate commonplaces for the main subject of a metaphorical statement from the network of associated commonplaces attached to the subsidiary subject.

Research Hypothesis: Grade 8 children will produce more high level responses and fewer low level responses than Grade 6 children.

Null Hypothesis: There are no significant differences between the mean overall scores or the mean category scores on the Associated Commonplaces test of Grades 6 and Grades 8.

Question 5:

How do Grade 6 and Grade 8 children differ in their ability to verbally retrospect about passages containing metaphors? To what extent do they differ in the production of Irrelevant, Translation, Interpretive and Elaborative responses?

Research Hypothesis: Grade 8 children will produce fewer low level and more high level responses than Grade 6 children when they verbally retrospect about passages containing metaphor.

Null Hypothesis: There is no significant difference between the mean overall scores or the mean category scores of Grade 6 and Grade 8 on verbal retrospective categories.

Question 6:

Is there any difference in the number of responses in different categories of the Associated Commonplaces test or of the verbal retrospections, for the ten metaphors in the study. If there are any differences, what characteristics of the metaphors might have led to the differences?

This question was answered by examining the total number of responses in the different categories of the Associated Commonplaces test and the verbal retrospections.

Where there were markedly different patterns of responses for a metaphor, the characteristics of the metaphor as described by judges' ratings were examined.

Question 7:

What relation do the qualitative differences between the highest and lowest scoring subjects on the Associated Commonplaces test and verbal retrospective responses have to a Piagetian interpretation of intellectual development?

This question was answered by an examination of selected protocols in the light of Piagetian theory.

IV. SIGNIFICANCE OF THE STUDY

Metaphor plays a central role in human thinking. According to Altick (1969):

> Metaphors have always helped man perform one of his most difficult tasks: That of making the abstract comprehensible in terms of ordinary experience and of explaining the seemingly mysterious in everyday language.

Yet, little is known about how metaphor functions in children's language or what children comprehend from written metaphor. This study will provide some information as to what children understand when they read metaphor.

Metaphorical language is an integral part of a very large amount of our creative literature; in fact, most poetry could be argued to consist entirely of extended metaphors. Hence, the appreciation by children of their literary culture must surely be contingent upon the degree to which they can grasp metaphor. Works of literature are an essential part of a language curriculum in the school, and a source of enjoyment to the child. According to Brown:

> Literature is not one of the embellishments of life, nor one of the frills of education. It is a necessity and deserves a central place in the English curriculum (Brown, 1971).

This study is relevent to both educational theory and practice because it involves the examination of higher-level critical reading processes which are of great interest in the field of reading theory, and because it attempts to illuminate how Grade 6 and 8 children understand metaphorical language- information which should be useful to the reading and language teacher in the classroom situation.

V. LIMITATIONS OF THE STUDY

The sample was drawn from a high socioeconomic status population. Thus, the results should not be generalized to include children of all socioeconomic levels.

The findings were derived from children's responses to written metaphor, so the results are not applicable to all forms of metaphor.

A further limitation is in the metaphors themselves. Different kinds of metaphors (such as scientific metaphors) may produce different kinds of responses. The metaphors in this study were all chosen from fictional prose passages. (Critics have argued that "The Fog" is a prose-poem, so for the purposes of this study it is considered more prose than poem).

The methodology used to collect data is a limitation of this study. Boring (1953) suggests that introspective-retrospective techniques are of value in educational and psychological research as long as the researcher acknowledges the fact that findings obtained in this manner are reflections of the process of thinking and not the process itself.

The tests used in the study are experimental tests, and as such, lack established reliability and some forms of validity.

VI. PLAN OF THE INVESTIGATION

The following format was used in reporting the investigation.

Chapter 2 contains a review of related philosophical and psychological literature that provided the background for the study and the basis for the construction of some of the instruments.

Chapter 3 discusses studies specifically in the field of reading, that are related to this study.

Chapter 4 describes the design of the study, the nature of the tests administered, testing procedures, statistical analyses and the characteristics of the sample.

Chapter 5 describes the manner in which the categories for classifying the retrospective verbalizations were derived, the nature of the categories and the reliability of scoring of the data.

Chapter 6 describes the performance of the test sample on various measures of metaphorical understanding and critical reading. A statistical analysis of this data concerning the relationships among various measures and the relative performance of Grade 6 and Grade 8 children is reported and discussed.

Chapter 7 contains a discussion of the qualitites of each metaphor based on the ratings of a panel of experienced judges, and a discussion of the responses made by the children compared to the judges' ratings.

Chapter 8 discusses selected high and low scoring verbalizations in the light of Piagetian theory.

Chapter 9 summarizes the study, presents the conclusions, implications and suggestions for further research.

CHAPTER 2

THEORETICAL BACKGROUND

This chapter provides a conceptual framework for the analysis of metaphor in three differing perspectives; philosophical views of metaphor; the relationship of some views from the psychology of thinking and language related to metaphor, and some perspectives from developmental phsychology that relate to metaphor.

Metaphor has been a topic of interest to many philosophers. In this chapter, some philosophical definitions, classifications and explanations of metaphor pertinent to this study are discussed. The discussion clarifies some theoretical terms and suggests aspects of metaphor to be investigated. The emphasis in this section is on providing a rationale for analyzing the content of metaphor, which has influenced the classification of metaphors used in this study along four dimensions (see Chapter 4 and Chapter 7). Although tentative explanations of metaphors by philosophers are included in this section, the study makes no attempt to validate most of the philosophical interpretations of metaphor. However, one philosophical explanation presented in this section is the basis for a test of metaphorical understanding (the Associated Commonplaces Test) used in the study.

There are very few psychological studies or theories directly relating to metaphor. This section examines some theoretical views which suggest possible interpretations of the process by which metaphors are understood, the process by which meaning is obtained from language, the type of meanings attached to words, the relationship of metaphor to cognitive and affective processes and the motivational properties of metaphors. Again, this section has contributed to the content analysis (dimensionalization) of metaphor, but the theoretical positions presented are broad perspectives and do not lend themselves to the posing of particular research questions. Hence, this section is largely an attempt to relate relevant psychological theory to a conceptualization of metaphor and to present some possible behavioral mechanisms through which metaphor is understood.

This section suggests some possible ways in which children at different developmental levels may differ in their level of interpretation of metaphor. The study later includes a descriptive section (Chapter 8) dealing with selected individuals' responses to metaphor and attempts to analyze them from a Piagetian point of view. Piaget's discussion of the development of thought is introduced in this chapter.

I. THE PHILOSOPHY OF METAPHOR

Philosophers have long been interested in metaphor. Aristotle's broad general definition - "giving the thing a name that belongs to something else" (cited by Henle, 1965, p. 173) - has the merit of simplicity and clarity. Cicero took the view that metaphor was a decorative feature of language which added to the pleasure obtained from language. More recently, philosophers have argued that metaphor has a more serious role than that of a stylistic device in the development of language.

Richards (1930) defines metaphor as the bringing together of two different active thoughts into an interactive meaning. Richards sees the relationship between the tenor (underlying idea or principal subject) and the vehicle (accessory idea or figure) of a metaphor as a critical sphere of concern for understanding metaphor. Richards describes the common characteristics between tenor and vehicle as the "ground" of a metaphor, which may be based on physical or even attitudinal characteristics which the vehicle and tenor share. The degree to which there is a common ground for tenor and vehicle in a metaphor has a considerable effect on the interpreter, according to Richards. If the tenor and vehicle are widely disparate as in "a bandaged town", the effect must be to "stretch" the imagination or extend the cognitive structure to a greater degree than where there are obvious similarities between tenor and vehicle as in "her hair of burnished gold". The relative importance of tenor and vehicle vary radically from one metaphor to another. Sometimes the vehicle gives a very vivid sensory impression of the tenor and sometimes the "picture" given of the tenor is extremely obscure. Richards argues that the modification of tenor by vehicle is due more to their unlikenesses than to their likenesses.

> Let us consider more closely what happens in the mind when we put together -- in a sudden and striking fashion -- two things belonging to very different order of experience .... As the two things put together are more remote, the tension created is, of course, greater. That tension is the energy of the shot, but we ought not to mistake the strength of the bow for the excellence of the shooting; or the strain for the aim .... (p.124)."

Richards goes on to argue that the mind seeks to resolve the doubt produced by disparity and resolve the tension by understanding the meaning of the metaphor.

Basically, Black argues, a metaphor consists of two subjects - a principal and a subsidiary subject, each with its set of associations.

Metaphors work by applying the network of associations attached to the subsidiary subject to the main subject. Everyday meanings or commonplaces usually comprise the network of associations attached to the subsidiary subject. Black (1968) discusses three approaches to metaphor: a substitution approach, a comparison approach and an interaction approach. The substitution view is a simplistic one whereby a metaphor is used in place of a literal expression (as defined by Aristotle). In this sense, metaphor is used as a kind of catachresis (improper use of words; application of a term to a thing which it does not properly denote), which in time becomes a literal meaning. Black cites the word 'orange' which may originally have been applied to the colour by catachresis but is now applied unmetaphorically to the fruit.

The comparison view of metaphor is presentation of an underlying analogy or similarity. The metaphor is felt to be somehow similar in meaning to its literal equivalent. When this underlying similarity is presented, as in "he has a fist of iron", the writer is taking a comparison view of metaphor. The comparison view is related to the substitution view since it holds that a metaphorical statement can be replaced by an equivalent literal comparison.

The interaction metaphor, is to Black, the most significant and powerful type of metaphor. The interaction view of metaphor construes metaphor as a dynamic cognitive action, one which leads to new concepts in thought and resists translation into literal language by its freshness and uniqueness. In the case of poetry, for instance (which could be described as extended metaphor), literal translation while usually wordy or complex fails to capture the essence of the poem, because what the poem is saying cannot be rendered any other way. In a similar way, interaction metaphors resist translation.

Black gives the metaphor, "man is a wolf" as an example of an interaction metaphor. Both wolf and man have a set of associated commonplaces. Thus, for wolf one might evoke the associations - cunning, swift, rapacious, treacherous.

> The effect then of (metaphorically) calling a man a wolf is to evoke the wolf system of related commonplaces.... A suitable hearer will be led by the wolf system of implications to construct a corresponding system of implications about the principal subject. The metaphor suppresses some details, emphasizes others - in short organizes our view of man (Black, 1962: 41).

Hence, interaction metaphors work according to Black, by selecting, emphasizing, and organizing particular aspects of the main subject which are normally associated with the subsidiary subject. The use of interaction metaphor is therefore seen as a device for shifting and developing meaning in language.

Alston (1964) considers metaphor to be a figurative use of language in which meaning is extended on the basis of similarity. Figurative language is defined by Alston as language which is not used in its established senses, but which is intelligible. Like Black, Alston considers that a rich metaphor is impossible to paraphrase accurately. Associated with the difficulty in literally rendering a metaphor is the vagueness of meaning which the writer has mentioned before.

> ...when one is speaking metaphorically, it is generally more difficult to be sure of exactly what he is saying than when he is speaking literally. In effect, he has given us something as a model for something else without making explicit in exactly what way it is supposed to be a model; we have lost the controls that come from using words in established senses (Alston, 1964: 102).

Thus, Alston makes the important point that the use of metaphor may create ambiguities. In the process of developing new meanings and new cognitive schemas through metaphor, words lose some of the clarity that they had when used literally.

Henle (1958) argues that metaphor has two functions. Firstly, metaphor extends language to meet new situations and secondly, metaphor has a poetic use to give language colour and nuance. Metaphor, according to Henle (1965) is "a sign, having a conventional sense, used in another sense" (p. 174). He contrasts the literal sense of a word with the figurative sense. The literal meaning corresponds to the dictionary meaning while the figurative meaning depends on the special sense of the metaphor and is more or less equivalent to some other literal sense or "paraphrase" of the metaphor. There is no particular type of parallel which is common to all metaphor, in Henle's view. Sometimes metaphors depend on common characteristics of two things, while other metaphors allow two distinct situations to be understood in terms of each other. Henle suggests that metaphor is effective to the reader or listener due to its outstanding characteristic of shocking the reader through the unexpected juxtaposition of two elements, thereby capturing the interest of the reader.

To Wheelwright (1967), the essential quality of metaphor is that it brings about a semantic transformation.

> ...the transmutative process that is involved may be described as semantic motion, the idea of which is implicit in the very word "metaphor", since the motion ('phora') that the word connotes is a semantic motion - the double imaginative act of outreaching and combining that essentially marks the metaphoric process (1967: 72).

Wheelwright says that there are two distinct kinds of metaphor:

epiphor and diaphor. Epiphor is metaphor in the Aristotelean sense, that is, the transfer of a name to something else, as in "life is a dream", to indicate a comparison with what is familiar. In this example, the aspects of life that are dreamlike are emphasized. Diaphor achieves its effect by juxtaposition, as in Ezra Pound's "The apparition of these faces in the crowd/Petals on a wet, black bough". Metaphor works through a combination of epiphor and diaphor.

> That there is epiphor in each of the instances is shown by the felt subterranean power to mean something more than the words actually say. That there is a diaphor is evident from the utterly untranslatable character of each utterance. ...the role of epiphor is to hint significance, the role of diaphor is to create presence. Serious metaphor demands both (Wheelwright, 1967: 91).

Expressed here are many of the attributes of Black's interaction metaphor: the resistance to paraphrase, the unique utterance, the extension of language.

To summarize, a variety of philosophical definitions of metaphor and a number of views on the function of metaphor in language have been discussed. Most philosophers would now argue that metaphor plays a prominent role in developing and refining one's view of the world. Such a view has developed from the Greeks who originally saw metaphor as a device to give pleasure to both speaker and listener. Most present-day philosophers argue that metaphor functions as more than a stylistic frill. Richards sees metaphor as combining different experiences to produce new meanings. The degree to which tenor and vehicle predominate and are disparate influence the powerfulness of the metaphor. Black orders metaphor into a hierarchical arrangement, the simplest being the substitution type (corresponding to Aristotle's definition) and the comparison type, with the interaction type of metaphor at the top. The interaction metaphor achieves its effects by the juxtaposition of two subjects by the speaker, while the listener takes from each word a particular meaning appropriate to the context. The interaction of the meanings of the two parts of metaphor produce a unique meaning which is more than either of its components. Wheelwright's position is not dissimilar to Black's, although he talks about two complementary processes in metaphor: epiphor or comparison and diaphor or juxtaposition. The two processes combined produce highly effective metaphors which are almost impossible to paraphrase and seem to be analagous to Black's interaction metaphors. Alston takes the simple definition of metaphor as an extension of meaning on the basis of similarity.

Henle suggests that one important role of juxaposition in metaphor is to capture the attention of the reader while at the same time language is extended in meaning through the device of metaphor.

II. THE PSYCHOLOGY OF METAPHOR

Metaphor can be thought of as a device in language which creates meaning or extends thinking. Although psychology contains little material directly dealing with metaphor, a number of theories provide insight into the possible functioning of metaphor within the framework of human language, expression and communication.

Osgood's (1953, 1957) work represents a relatively behavioristic view of the development of word meaning, but his analysis contributes greatly towards systematizing an area characterized by confusion. Osgood argues that meaning is established by a process of classical conditioning. When an object such as a ball is presented to an individual it evokes unconditioned responses such as eye movements, grasping, squeezing and possibly pleasurable emotional responses. If the word "ball" is consistently paired with the object ball, it comes to evoke some portion of the total behaviour elicited by the object itself. Osgood calls this partial response a "representational mediational process" which is "some minimally effortful and minimally interfering replica" (Osgood, 1953: 696). The mediational process which is evoked by a sign is usually an implicit unobservable response, although Osgood claims that in early stages of the growth of meaning the response may include muscular reactions (as when a child clenches his fist when he hears the work 'hammer'). Hence, a word first builds up a set of associations through the physical and concrete sense experiences of the individual. When a word obtains meaning in this way, Osgood terms it a "sign". However, as Osgood points out, many words attain their meaning not through direct association with the objects signified but through contact with other signs. Thus, few children have direct contact with zebras but most 5-year-olds understand the word through association with horses, stripes, wildness, signs which have previously established appropriate mediating processes. Words which have acquired meaning in this manner are called "assigns" by Osgood.

The metaphorical process seems to have certain characteristics in common with the development of assigns. A simple metaphor "Mrs. Jones is a cow" can be analyzed in the light of Osgood's analysis. The word "cow" would for most individuals be a "sign". That is, the meaning of the word has been built up through direct sense impressions, perhaps through pictures of cows or through experience with real cows. The representational mediational processess associated with "cow" are sort of summary statements ("minimally effortful replicas") of what a cow is like. In more abstract terms these qualities might be defined as slowness, stupidity, unresponsiveness, but this verbal description doesn't represent the fact that the mediation is related to the sense qualities of the cow. (of course, a metaphor could be made up from more symbolic "abstract" meanings). In order to represent the qualities of Mrs. Jones, it is useful that an audience already has learned the mediating process for a cow which also happens to be applicable to Mrs. Jones. In other words, a metaphor simply uses the mediating processes which have already been learned to represent some new meaning or at least to add to the meaning of a concept. The main difference between a metaphor and an assign is that a metaphor only temporarily transfers mediating processes to the object of the metaphorical expression while an assign establishes a permanent association. Also a metaphor does not necessarily utilize all the mediating processes evoked with a word. Presumably a dead metaphor is an assign. Anderson (1964) concisely states an interpretation of metaphor in terms of mediational theory:

> From this behaviouristic standpoint, therefore, metaphor arises when there is an interchange of words or expressions that evoke the same meaning or representational mediational process because they are attached either directly or indirectly to different properties of the same significate (p.62).

While Osgood's theory is a useful organizing and simplifying one it unfortunately leaves several questions unanswered. For example, the precise nature of the mediation involved is left unresolved. In more complex metaphors the mediational processes transferred or combined could be very complex indeed, drawing upon diverse meanings to create some entirely new combination of mediating responses; in other words, a unique meaning could be established.

It is possible to make a broad distinction between the types of mediation process, meaning or associations involved in language. Usually, linguists and philosophers differentiate the denotative or dictionary meaning of words from the connotative or affective personal meaning.

Luria (1969) describes the two aspects of semantic content found in words: the designating, nominative function of words and the "system of generalizations which each word represents, the system of associations and relations which are reflected in them" (p. 133). Therefore, words have both a classifactory, analytic, abstracting function and a more global function of "transmitting a total human experience to the listener" (p. 133). Di Vesta (1966) defines denotative meaning as reference to criterial attributes, whereas connotative meaning refers to non-criterial attributes. It would appear that a good deal of the controversy in philosophy over whether metaphors can be literally translated or whether they work by simply substituting one meaning for another, could be clarified by looking at what type of mediation is involved in metaphor. Most words contain both denotative and connotative associations, but they differ in the extent to which they carry connotative meanings. Certain metaphors such as "a fork in the road" or "the foot of the tree" seem to work simply by the appropriateness of the denotative meaning. The relation of a foot to the rest of the body is similar to the relation between the foot of a tree and the rest of it. Similarly, Watson used the term 'spiral staircase' to describe the structure of the D.N.A., molecule. It would seem that this nominative, classificatory, systematizing aspect of word meaning is particularly important in what most philosophers seem to regard as inferior sorts of metaphor. The transfer of denotative meaning would be primarily involved, for example, in Black's (1962) substitution and comparison metaphors. The fact that denotative meaning is being transferred renders such metaphors easily translatable into literal terms, since denotative meaning is common to most speakers of a language. In other words, communication is facilitated because similar mediating processes will be evoked in speaker and listener. On the other hand, when more complex types of metaphor such as Black's interaction metaphor are considered, it seems that a transfer or combination of connotative meanings is involved. Since connotative meaning is highly personal and dependent on the experience of the individual, while denotative meaning is common to a culture, several characteristics of more complex metaphors become more understandable. It is difficult to provide a literal translation of connotative metaphors (or interaction metaphors) without loss of meaning because of the idiosyncratic subjective nature of connotative meaning. In other words, communication is not guaranteed because it is impossible to be certain that common mediating responses are evoked for the speaker and his audience. On the other hand, the closer link between connotative meaning and affective autonomic processes suggests that it may be highly effective in capturing the reader's interest and attention.

A sharp contrast to a behavioristic interpretation of metaphor is provided by Werner and Kaplan's organismic approach. They argue against Osgood's explanation of meaning and claim that such a view denies what they see as an essential characteristic of language, a "creative role in cognitive organization of experience and thought" (p. 15).

According to Werner and Kaplan, the symbol is the vehicle by which man comes to know the world. Symbols serve the unique function of representation by a dynamic schematizing activity which enters directly into the construction of the cognitive world.

> Objects are given form, structure and meaning through inner dynamic schematizing activity which shapes and intertwines the sensory, postural, affective and imaginal components of the organismic state (1963:18).

The basic difference between the organismic view and that of the behaviourist is that meaning emerges not directly from contact with the external word of the senses, but by the individual's actions (dynamic schematizing) upon those external stimuli in order to create something new. Werner and Kaplan explain the difference between their view and that of Osgood:

> ...both our view and Osgood's hold that there is similarity' between 'reaction' to the referent and and 'reaction' to the vehicle. But here the agreement of the two viewpoints end. Osgood's view.... does not distinguish fundamentally between mere reacting and knowing; representational activity is treated as a response essentially no different from other responses... for us... representational activity goes hand in hand with the construction of a world of objects (Werner and Kaplan, 1963:24).

Kaplan (1962) attributes to metaphoric activity a major role in the formation of language. Radical metaphorizing, he defines as "the process of taking any lived-through or enjoyed experience, and expressing or representing that experience in a medium which is....completely foreign to that experience" (p. 76). Hence, he gives an exceptionally broad definition to metaphor. For example, he claims that metaphoric activity is at the base of all verbal utterance since a cognitive or emotional experience is translated into sound, a medium which is foreign to that experience. "Without metaphoric activity", according to Kaplan, "there can be no representation" (p. 77). Kaplan ascribes to metaphoric activity and to aesthetic activity the power to create language. In these two processes Kaplan sees the origins of language. While radical aesthetic activity gives form to what is otherwise formless, radical metaphorizing is the act of intentionality which allows a relation of representation to hold between one object and another. Kaplan argues that "...the subject aesthetically, imaginatively, restructures the pattern so that a relationship of 'fittingness' obtains between vehicle and referent" (1962:84).

Bruner (1965) considers metaphor as a cognitive act of recombining old known structures to produce new ideas. "Metaphor joins dissimilar experiences by finding the image or the symbol that unites them at some deeper emotional level" (1965:63). This could be interpreted as saying that they evoke similar or related mediational processes. Bruner sees metaphor as involving economy as well as emotional connectedness. The characteristic of economy is felt by Bruner to be of great importance since it enables man to cope with the vast amount of knowledge in the environment. He uses it as a device to make sense out of this world. The activity of schematizing and organizing information is a quality in metaphor which connects apparent disparities. Bruner finds examples of metaphorizing in both science and art. He describes how Nils Bohr discovered the principle of complementarity in physics by considering the analogy that the ability to love a person and the ability to judge that person are complementary ideas. That is, the possession of one automatically excludes the possession of the other. In a similar fashion, metaphor functions by going beyond the information given. By using the example of a twelfth century painting by Giotto, Bruner directly illustrates how metaphor works. Giotto, according to Bruner, used the combinatorial activity characteristic of metaphor by joining together the plight of man and the suffering of Christ. Man and God are joined together metaphorically so that new depth is given to the understanding of both of them.

Piaget's (1953) conceptualization of how individuals interact with their environment through the process of adaptation can be applied to metaphorical activity. Adaptation consists of two complementary processes: "assimilation", through which the individual handles environmental events in terms of past learning and "accommodation", the process by which schemata are extended to handle some new environmental event. Intellectual growth depends on adaptation, which allows an individual to build up an increasingly wider and more complex store of cognitive structures, which enable him to cope with new and familiar situations.

In relation to metaphor, adaptation is a useful explanatory concept. The verbal experience of an individual is part of his cognitive structure. Specifically, whether a metaphor is understood or not will depend on the individual's verbal or representative schematas. A metaphor which introduces verbal concepts into an unfamiliar context could act as "aliment" to the schema resulting in an expansion of meaning or extension of the verbal schematas by accommodation. If the words and concepts used in the metaphor were too unfamiliar, then accommodation would not occur (the metaphor would not be understood) and if the words used were extremely familiar, the metaphor would be readily assimilated without extending existing schemata. A metaphor which produces some degree of mismatching to the present schemata is likely to result in more motivation to resolve the mismatch and result in some new cognitive structure. The combinatorial process that Bruner suggests is at the root of metaphor, could be a combination of parts of different verbal schemata to produce a new schemata.

One of the phenomena associated with the effectiveness of metaphor, which has been frequently mentioned in philosophical accounts of metaphor is its shock or surprise value. This phenomenon is given an effective theoretical basis by the work of Berlyne (1960). Berlyne argues that there are a number of variables which effect the arousal level of an individual. One group of variables that Berlyne considers to be determinants of arousal are called collative variables. These seem to be of particular relevance to the effectiveness of metaphor. Collative variables describe relations between stimulus patterns on the one hand and conditions of the organism on the other hand. Examples of collative variables which have been found to influence arousal are novelty, surprisingness, complexity and incongruity. According to Berlyne: "When we ask what the collative properties have in common, one hypothesis suggests that all involve conflict between incomparable response tendencies" (1967).

Novelty, for example, is effective because the novel stimuli evoke an arousal response. An intermediate degree of novelty which is not too unfamiliar and yet which is sufficiently related to past experience is the most appropriate for motivation. Novelty may be one ingredient in the functioning of metaphor. That is, the use of words in contexts which are unfamiliar may be effective in producing an arousal reaction in the individual so that he is more attentive to the information presented by the metaphor. Hence, when a metaphor loses its novelty, it becomes "dead" and loses its arousal value. Surprisingness is another collative variable, related to novelty, which is evoked for example when the context of a sentence leads one to expect literal words but instead a metaphoric expression is encountered. Incongruity occurs also when a stimulus induces an expectation which is disappointed by the accompanying stimulus. This is found especially in the more exceptional kinds of metaphor like Wheelwright's "diaphor" (e.g., "And although her health eventually failed her/She kept her sense of humour to the beginning" E.E. Cummings). Similarly, uncertainty would be another collative variable which is sometimes involved in metaphor. Several writers (e.g., Alston) have pointed out that ambiguity and lack of clear meaning is often involved in metaphor. The uncertainty in what is being communicated by a metaphor leads to arousal which motivates the individual to clarify the meaning of the metaphor and reduce his arousal to an optimum level.

In summary, this section has dealt with the question of the relationship of metaphor to the development of meaning and thinking from a number of theoretical viewpoints. Metaphor was looked at in the light of Osgood's mediational theory of meaning. Osgood argues that meaning is established by pairing words with environmental stimuli. Thus, words come to evoke a portion of the total behaviour elicited by environmental stimuli. These portions of the total response are called representational mediational processes. It is argued that metaphor works by transferring the mediating responses attached to the metaphorical expression to the object of the metaphor. Both denotative and connotative meaning may be considered as mediational processes. Simpler forms of metaphor, such as Black's substitution metaphor may transfer denotative meaning only, while more complex metaphors, such as interaction metaphor, consist of the transfer of combinations of the connotative aspects of meaning to a greater degree. This seems to account for the difficulty in literally translating certain metaphors.

Werner's and Kaplan's organismic approach differs from the behavioristic approach in that they postulate dynamic schematizing activity on the part of individuals is involved in the development of meaning, rather than relatively passive response to incoming stimulation. Kaplan sees metaphor as a process basic to all language and thinking.

Bruner's view of metaphor as combinatorial activity whereby familiar cognitive structures are combined to form new ideas, was presented. Metaphor, according to Bruner, not only involves emotional connectedness, but economy of representation which helps make sense of the multiple information in the environment. Piaget's theory of adaptation was also applied to metaphor. When a metaphor does not readily assimilate to existing structures, accommodation of these structures would be expected to occur. That is, already existing verbal schemata would be combined or extended to produce wider meanings. When the metaphor is understood, it has been assimilated to the schemata. Finally, Berlyne's argument concerning collative variables such as novelty, surprise, incongruity and uncertainty, and their effect on arousal, was discussed and applied to metaphor. It was suggested that metaphor contains many elements of collative stimulus properties and that it is most effective when it produces an intermediate level of arousal by containing pleasing levels of novelty, surprise, incongruity or uncertainty.

III. DEVELOPMENTAL PERSPECTIVES ON METAPHOR

A separate section concerning the views of developmental psychologists on metaphor is presented here since the issue of level of understanding of metaphor is distinct from the issue of the general behavioral mechanism through which metaphor is understood.

One of the important questions which is raised by a consideration of children's understanding of metaphor is what level of understanding can be expected from children of different ages. There is very little developmental literature dealing specifically with metaphor. Watts (1944) is an exception when he states that children do not understand metaphorical language before the age of eleven. The fact that there is very little direct evidence concerning the relationship of developmental level and the comprehension of metaphor is rather surprising considering the fact that the planning of curriculum and the preparation of basal readers continues with little in the way of knowledge of appropriate instructional objectives with respect to metaphorical language. There is, however, some material which illuminates the manner in which meaning develops for children and even more material in the area of the development of children's thinking which relates indirectly to the comprehension of metaphor.

According to Bruner (1966), the learning of reference or the building up of word meaning is a slow and complex process. The child progresses from coarse to fine semantic distinction by learning the different senses in which a word can be used and the different contexts into which it fits.

Vygotsky (1962) sees the development of word meaning as moving from being global and multifunctional to a differentiated nature. The child's first word meanings are usually idiosyncratic and diffuse, with meanings created by the chance linkage of words with perceptions. "The child tends to merge the most diverse elements into one unarticulated image on the strength of some chance impression" (Vygotsky, 1962:60). During the process of development, meanings become less tied to the concrete and develop into simplifying, abstracting and generalizing concepts.

Vygotsky's view would suggest that younger children's difficulties in understanding metaphors might arise out of their inability to distance themselves from their idiosyncratic interpretations sufficiently to comprehend the use of words in an unfamiliar context. While metaphors are themselves frequently idiosyncratic, an understanding of them requires the taking of another point of view as well as sufficient common meaning between the communicator and the interpreter to allow the metaphor to make sense to the interpreter.

Werner and Kaplan's (1963) view is not dissimilar to that of Vygotsky. They argue that in the early stages of meaning development, words are highly bound to concrete situations and in order for communication to occur the communicator and the interpreter must have shared experiences and be closely linked to each other. There is a gradual shift away from individualized egocentric meanings which lack stable and precise connotations, to more complex, abstract, conventionalized and stable meanings.

It is interesting that there are certain characteristics of children's thinking such as synesthesia, animism and analogising which are an integral part of metaphorical processes. Are we therefore to expect that children will be better able to understand metaphors than adults? Watts would deny this emphatically. He says that when young children think by analogy and personify they are making mistakes. Mature analogy and metaphor are entirely different processes from superficially similar processes in children, in Watts' view. When they form analogies, children are unable to select the appropriate similarities between two different situations. According to Watts: "they are apt to think that what is true of a given situation with which they are familiar must be just as true as another which it resembles" (1944:253).

Watts' ideas on children's understanding of metaphor are influenced to a considerable extent by Piaget. Piaget has devoted considerable attention to the characteristics of children's thinking at different stages of development. According to Piaget (Flavell, 1963), there are four main stages in the development of intelligence: the sensori-motor, preoperational, concrete-operational and formal operational stages. The first stage has no direct link with metaphor since thinking occurs largely through manipulation of objects and by interaction with the environment through the senses. Children are most often initially exposed to spoken metaphor during the preoperational stage which occurs from about 2 to 7 years of age. Preoperational thought is characterized by egocentrism or the inability to take the role of another person which is particularly evident in the child's difficulty in communicating through language. There is an inability in the child to adapt his language to the needs of a listener. Another characteristic of preoperational thought is its tendency to be centrated. The child focuses on one aspect of a situation to the neglect of other important aspects, and these biases cause the child to make numerous errors in reasoning. Preoperational thought is static and immobile, the child being unable to integrate a whole set of impressions and make them logically coherent. Thought is characterized by disequilibrium. According to Flavell: "He has no stable, enduring, and internally consistent cognitive organization, no system in equilibrium, with which to order and relate, and make coherent the world about him" (1963:158).

During the period of concrete operation (from 7 to 11 years) one would expect that the child is fairly frequently exposed to metaphorical language, since children's slang is largely metaphorical. The child operating at the concrete operational level is able to command an integrated and cohesive cognitive system in his interactions with the environment. The data of thought is, however, concrete and physical. The child performs real actions on substantial parts of the environment and as yet has no ability to handle abstractions. Inductive and deductive logic occur with limited concrete situations, actions, visual and sensory data. The child is able to form stable classes, to associate different aspects of situations and to reverse his thinking. The main limitations of this period occur in the area of verbal behavior, while the child is still limited in his ability to extrapolate to the hypothetical situation. He even finds it difficult to generalize from one concrete field to another (Goldman, 1964).

The final stage of formal operational thought occurs from the age of eleven onwards. At this time, curriculum materials use a large amount of metaphorical language. During this stage the capacity to think hypothetically and deductively develops. The data of thinking are more abstract and are usually in the form of propositions. Children achieve the ability to think in terms of the possible rather than the real and they master abstract, symbolic logic.

Goldman's (1964) work on religious thinking, which has a Piagetian theoretical framework, provides some suggestions about the relations of stages of thought to metaphorical understanding. The fact that the material of religious education is largely metaphoric renders Goldman's work even more relevant to the present investigation. Concepts such as Jesus as a shepherd and God as a father illustrate this point. Goldman's study consisted basically of asking children to explain some simple biblical stories. For example, children of different ages were asked this question about the story of Moses and the Burning Bush: "Why was Moses afraid to look at God?" During the preoperational phase, answers such as "God had a funny face" and "It was because he hadn't spoken politely to God" were common, illustrating such factors as the child's tendency to centre on irrelevant aspects of the situation and their reasoning from one particular to another. During the concrete operational stage children answered this question in terms of specific actions and specific wrongs, concrete elements dominating the situation. For example, one child said "Moses hadn't been going to Church" and another "It was the bright light (from the burning bush) and to look at it might blind him." At the formal-operational stage, children were able to liberate themselves from their concrete limitations. They argued that Moses was afraid to look at God because he shared with mankind a feeling of sin and unworthiness. One answer was "The awesomeness and almightiness of God would make Moses feel like a worm in comparison."

Children's understanding of metaphor would be expected to be incomplete until the formal operational stage. During preoperational thought the child's word meanings would be largely idiosyncratic and would probably focus on irrelevancies. The inability of the child to detach himself from his own viewpoint would make it hard for him to have the flexibility necessary to understand metaphor. During concrete operations, children should be able to grasp some of the simpler metaphors where there is an obvious similarity between frame and focus of the metaphor. However, the task of understanding a more subtle metaphor where a judicious selection of appropriate commonplaces is necessary may be too difficult for the child at the concrete operational level. He will likely tend to grasp the most dominant or common meaning of the metaphorical frame and attempt to understand the focus in such terms. One would expect that metaphors with concrete, sensory attributes will be most easily grasped, while many metaphors will be understood only intuitively or globally.

The formal-operational stage should see the child grasping more complex subtle metaphors and having the ability to detach himself from the dominant word meaning in order to select the best meaning. It is also possible that the child will be able to understand abstract conceptual metaphors as well as simple concrete ones. However, the early stages of formal-operational thought may provide examples of difficulties characteristic of earlier stages when the material is very unusual.

In summary, the literature suggests that children's word meanings progress from a random idiosyncratic conglomeration of physical impressions to a stable, differentiated conventionalized conceptual nature. The ability to create or understand metaphors is regarded as different in nature from the naive analogy and thinking that children employ. The characteristics of immature thought are that it is static, egocentric, inconsistent and relies upon the physical environment, while mature formal operational thought is stable, logical, hypothetical and capable of handling abstractions.

IV. RELEVANCE OF THEORETICAL FRAMEWORK TO THIS STUDY

The views of philosophers on metaphor suggested a number of things which influenced the present study. Firstly, it enabled the investigator to examine and compare various definitions of metaphor and to select an appropriate one. Black's explanation of metaphor is particularly pertinent to this study because it suggested a possible procedure for measuring children's comprehension of metaphor. Black views the metaphorical process as the selection of associated commonplaces from the meaning network of the subsidiary subject of a metaphor and out of these associations the construction of a system of associations for the principal subject. The question of the degree to which children are capable of selecting appropriate commonplaces was examined in this study by presenting children (after they had read a metaphorical passage) with a large number of relevant and irrelevant associations and asking them to select the ones appropriate to the passage. This was called the *Associated Commonplaces Test*

Secondly, the views of philosophers were utilized in this study in the construction of four dimensions of metaphor. These dimensions were devised to classify metaphors according to content and to examine children's responses to different types of metaphor. For example, Black's ordering of metaphors into substitution or comparison metaphors and interaction metaphors suggests that children would have less difficulty understanding the former than they would have understanding the ? latter. This idea was incorporated into the simple-complex Dimension. Similarly, Richard's discussion of disparateness between tenor and vehicle in the metaphor, Henle's analysis of the effectiveness of juxtaposition in metaphor and Wheelwright's description of diaphor raise the question of whether incongruous metaphors are more effective. The younger child may have considerable difficulty in grasping these metaphors since they "stretch" the ordinary language of the child to such an extent. In other words, philosophical analysis of metaphor implies that there are certain metaphors which are much more difficult than others for children to understand. These ideas contributed to the common-unusual dimension and the simple-complex dimension.

A number of the psychological views discussed present different facets of the same arguments presented by philosophers. Thus, Bruner describes metaphor as combinatorial activity, which is not dissimilar to Black's view of interaction metaphor. Also, Berlyne and Piaget's views on motivation suggest a more clearly conceptualized basis for what Richards, Henle and Wheelwright say about the shock value of metaphors. Piaget's theory of adaptation implies that disparate metaphors juxtaposing unusual elements might be too difficult for the child because they are not assimilable to the present meaning schemata. Psychological theories therefore support Black's conceptualization of metaphor. A test was therefore derived from his explanation. Also, the common-unusual dimension was related to Berlyne and Piaget's discussion of motivation.

Luria's discussion of different aspects of word meaning suggests that metaphors working largely through connotative associations may be more difficult for children to understand than those with mainly denotative associations, since there may not be enough communality of connotative meaning between author and reader to ensure understanding. Luria's view contributed to the construction of the connotative-denotative dimension of metaphor.

Developmental theory suggested that younger children have egocentric, concrete, unstable meanings while older children have more stable, conventionalized and abstract meanings. Therefore, Grade 6 children should have more difficulty detaching themselves from their own viewpoint and from the concrete, physical elements of meaning, while Grade 8 children should have the flexibility and more elaborate and extensive meanings necessary for them to select appropriate associations for the metaphorical context. Abstraction, incongruity and complexity of metaphor would be expected to widen the gap between Grade 6 and 8 children's understanding. The developmental theory discussed therefore led to the hypothesis that Grade 8 children would produce superior types of understanding of metaphor than Grade 6 children, on both verbalizations and Associated Commonplaces choices.

Piaget's theory in particular played a crucial role in the present study. His discussion of the development of thinking was presented briefly here to introduce some concepts which were developed in a great deal more detail in Chapter 8. Selections from children's verbalizations are later analyzed subjectively in a Piagetian framework as Goldman did with religious thinking.

CHAPTER 3

METAPHOR AND READING

This study is an investigation of children's understanding of metaphor within the context of the reading process. This section presents metaphor within the theoretical framework of reading and presents related research findings. Comprehension of figurative language such as metaphor is one of the higher-level cognitive processes occurring in reading. Because of the complexity of such processes the theoretical and research literature in reading has often failed to come to grips with the problems involved. Hence, there is little research directly relating to reading and figurative language.

In this study, reading has been viewed as a complex cognitive act. Stauffer's (1970) definition expresses this view well: "Reading is a form of problem-solving...an active cognitive process of seeking relationships to, differentiating from, and reconciling with existing ideas."

Although Stauffer is here referring to the reading field in general, Black has described the metaphorical process in similar terms when he argues that they organize our view of the world. Stauffer's "seeking relationships" is akin to Black's description of metaphor as putting a template on our understanding. In the process of interpreting metaphor, the individual must seek a relationship between tenor and vehicle, differentiate the relevant from the irrelevant meanings and reconcile the selection of meanings to provide the resultant new meaning for the metaphor.

Russell (1970) identifies four levels of comprehension in reading: word identification; general impression of the paragraph, page or passage; reading for the exact literal meanings of the passage; going beyond literal details to selection, interpretation and fresh understanding of the material. The fourth level is compared by Russell to critical thinking. "The reader sifts, accepts, and rejects depending upon his experiences and his purposes" (p.152). Similarly, Gray (1960) talks about reading the lines, reading between the lines and reading beyond the lines as being the components of the reading process, while Zintz (1970) sees reading as involving perception, comprehension, reaction and integration. In all these analyses of the reading act, the interpretation of metaphor seems to fit most clearly into the most complex category of reading, although it seems that the simpler components of reading must be mastered before the child can reach this level of understanding. Metaphor requires that the reader integrate a variety of associations to form a new concept.

When one attempts to place a study of metaphor within the general framework of reading skills, the shortcomings of such schemata become apparent, since they most often are restricted to cognitive factors and tend to ignore the affective side of reading. Much of metaphor depends on a shared communality of associations, between author and reader. One cannot properly include metaphor in a hierarchy of reading skills if there is no reference to the link between author and reader. Perhaps this quality of metaphor fits best into what Altick (1946) calls the "tone" of a reading passage. Tone is the overall emotional and intellectual effect of a piece of writing. Tone affects what a reader's attitude is towards the material being read. It is the job of the author to affect the feelings of the reader in a certain way, according to Altick, and he usually makes a deliberate effort to do this.

> From the reader's standpoint it is highly desirable that such strategy be understood and taken into account....If we understand how tone is achieved, we are able to discover what attitude a poet or essayist has toward his subject. ...A careful consideration of tone may intensify our own feeling and the lessons of our own unrecorded experience by clarifying the author's precise mood and thus revealing meanings which we may unconsciously share but are unable to articulate (Altick, 1946:130).

Metaphorical language is one of the most familiar ways in which an author communicates tone to his readers. The communication of metaphor through print is a very different process from its oral use. The child is first exposed to metaphor through oral language, such as slang and verbal abuse and usually somewhat later he is expected to interpret metaphor in print. According to Kress (1970), a child's ability to use and understand spoken metaphor is absolutely no guarantee that he will understand it in printed form. There are a number of variables which differ in oral and reading interpretation of metaphor. For example, non-verbal factors such as intonation, facial expression and gesture would be expected to be particularly potent for communicating metaphorical meanings which are often so heavily imbued with affective qualities. The possibility of immediate feedback in the oral situation where a metaphor can be explicated if the meaning is not immediately understood, renders the communication of meaning easier. Also, the differences in the structure and content of typical oral and written language (e.g., the passive voice is seldom used in oral language) are likely to increase the gap between understanding oral and written metaphor.

In order to understand metaphor, Kress argues that the reader must first read the passage literally in order to detect that a nonliteral interpretation is needed. Previous experience of metaphor helps the reader to observe the cues which suggest that a literal reading does not hold up logically. Then the reader has to discover the basis for the metaphorical comparison by selecting the appropriate associations from the vehicle of the metaphor and applying them to the tenor.

According to Perrine (1971), there are four basic questions that face the reader in interpreting metaphor. First, the passage must be identified as metaphorical. Secondly, the two things being compared must be identified and thirdly the reader must identify which are the literal and figurative terms in the metaphor. Finally, the grounds for comparison must be determined. The first question is the most crucial since if the reader does not identify a passage as metaphorical he will have no reason to ask the other questions. The question of whether a passage is metaphorical or not is usually established by the surrounding context. However, this problem can become very acute when the metaphor is extended, which often occurs in poetry. Perrine cites several examples where there has been considerable disagreement among experts over the identification of a passage as metaphorical or literal.

The task of reading and interpreting metaphor is therefore a difficult one for the child. The degree of difficulty will depend on the number and subtlety of context clues provided in the passage relating to both cognitive and affective content; on the meaning networks evoked by the metaphor; and on the reader's ability to select, integrate and combine the components of meanings given. The procedure in this study of asking children to explain the metaphors after reading them (and then categorizing children's responses) was intended to discover the manner in which children solve some of the above difficulties of reading metaphor.

Research Studies in Children's Understanding of Figurative Language

There have been relatively few studies dealing with children's understanding of printed metaphor. What research has been done usually deals with a wider selection of figurative language and hence educational research in the area has not dealt specifically with metaphor. There are some studies in literature appreciation that have pertinence to the present study.

Ayer (1926) attempted to measure children's understanding of figurative language by asking them to paraphrase 35 paragraphs taken from fifth grade history tests. Twenty-three percent of the fifth grade students' paraphrasing was judged correct and 32.7 percent of the seventh grade responses were judged correct. Ayer found that many of the misunderstandings which occurred were due to the subjects ignoring the paragraph context in which the metaphors were embedded.

Looby (1939) used a reading selection entitled "Achilles, Famous Leader of the Greeks" in order to test grade 6 children's understanding of figurative words and phrases in literature. Looby divided the passage into three parts, taught the first part and tested the comprehension of the children on the last two parts. Again, the paragraph content was found to be extremely important. Those students who understood the figures tended to use the surrounding context to help them, while students who made errors frequently paid insufficient attention to the rest of the paragraph. If the students were faced with many unfamiliar words in the passage, this provided another major source of difficulty in interpretation. This is rather surprising since most metaphors use ordinary words and one would expect the transfer and selection of meaning to be more of a problem than the literal understanding. Looby found a high correlation between children's understanding of the literary passage and their reading and mental age.

Flaum (1945; reviewed by Hollingsed) examined the figures of speech present in grades 4, 5, and 6 social studies texts and selected those he considered most difficult. Understanding was measured with multiple-choice tests. There was an increasing degree of understanding between grades 4 and 6. Flaum found that similes were more difficult than either metaphors or personifications, another surprising finding in view of the fact that similes usually provide a much more explicit comparison. Flaum interviewed the majority of his subjects in order to find out more about the reasons for their incorrect answers. Interestingly, he found that many children who answered incorrectly on the multiple-choice test were able to verbalize an adequate understanding of the figure when interviewed. Flaum's study, while suffering from lack of validation for the multiple-choice tests, offers some evidence for the advantages of using retrospective techniques in terms of its potentiality for revealing more about how children come to misunderstand what they read.

Hollingsed (1959) examined the number of figures of speech in grade 4 to 6 basal readers. He found that in the 15 basal readers he studied, metaphor was the most common figure of speech, comprising 36 to 46 percent of all figurative language. The next most frequently used were personification and simile (29 to 40 percent). None of the series provided any systematic lessons on the interpretation of figurative language, although there were isolated practice exercises. Children's understanding of figurative language was tested by a 25 item multiple-choice test. Each grade level was administered a separate test which drew on the stories in the series of readers. In grade 4, 53.75 percent correct responses were made, 56.88 percent in grade 5 and 62.65 percent in grade 6. Metaphor and simile were similar in difficulty (58.31 percent correct and 59 percent correct) while personification was more difficult (50 percent correct). In other words, nearly half of the figures of speech found in the various reading programs were misunderstood. Hollingsed found positive correlations between IQ scores and understanding of figurative language in the grade 5 and 6 classes while there was a slight negative correlation in the grade 4 class. There was little attempt to provide other than face validity for the test and no attempt to interpret the strange discrepancy in the grade 4 correlation.

Letton (1958) analyzed grade 9 children's responses to a sonnet using introspective techniques. This study differed from others in that the sample was carefully selected from a verbally sophisticated group of children. The author rejected any form of multiple-choice test and relied entirely on retrospective techniques with a small sample (24). Her sample was divided into high and low-level interpreters on the basis of a standardized reading test and a standardized poetry interpretation test. Her chief findings were that high level interpreters were better able to make accurate inferences, comparisons and germane illustrations as well as personal interpretations than the low level group.

Burt (1971) used a multiple-choice test and retrospective techniques to assess grade 5 children's understanding of similes. There were significant relationships between mental ability, reading ability, certain background experiences (such as reading the newspaper frequently, borrowing books from the library) and understanding of similes. Similes involving the relating of several concepts through syntax created most difficulty in understanding for the subjects, while difficulties with understanding word meanings was also a cause of problems. Burt argued that a major factor of importance in the understanding of simile is a multiplicity of word meanings. Even where students could not adequately verbalize the meanings of similes, they could often state that reading the simile evoked feelings for them. Comparing the responses of students on the multiple-choice test and during the interview suggested that the multiple-choice indicated greater understanding than did the students' verbalizations.

One procedure which has been used to assess children's understanding of literature has been to examine their responses to the material and derive categories from these responses. Squires (1964) examined the responses of 9th and 10th grade students to four short stories. Seven categories were created to code all of the responses: literary judgements, interpretation responses, narrational reactions, association responses, self-involvement, prescriptive judgements and miscellaneous. Purves (1966) studied the responses of literary critics, teachers and students to literature and devised a highly complex system of categories and sub-categories comprising 120 elements. The purpose of categorizing readers' responses to material is to systematize the mass of responses produced by the stimulus material so that generalizations can be made concerning the readers' reactions to the material.

In summary, this section has been an attempt to analyze how children understand metaphor in printed form. Kress sees the reading of metaphor as involving first of all a literal reading, detection of the metaphor and its interpretation. Perrine claims that reading and comprehending metaphor requires recognizing the metaphorical nature of the passage, determining what is being compared and what the grounds of comparison are. Various views of reading which emphasize its problem-solving nature at the most complex cognitive level were examined and related to metaphor. Information is selected, interpreted and reorganized when reading metaphor. The problem of communicating affect between author and reader was discussed and related to a description of tone as a quality in written passages.

A number of studies on figurative language were reviewed. The findings varied in the degree of understanding of metaphor which was found, depending on the materials used, the method of testing understanding and the nature of the sample. Many misunderstandings were found to be due to poor vocabulary and insufficiently careful reading of context. In general, high correlations were found between reading achievement, IQ, and understanding of figurative language. Test instruments were most commonly multiple-choice tests but a number of studies employed retrospective questioning techniques.

Educational research into figurative language lacks a strong conceptual basis. Most of the studies reviewed did not examine the relationship between theoretical analyses done by philosophers and psychologists and the content of the study. Frequently, weaknesses emerged from a simplistic view of figurative language and a failure to analyze the variables which might render such language more or less difficult to understand.

The present interpretation attempted to overcome the lack of conceptual bases in past studies in several ways, but particularly by incorporating Black's theory into a test of metaphorical understanding. The design of the study was also influenced by the failure of many studies to allow subjects to respond freely. The author regarded free responding to be a necessary component of the study in order to encompass the wide range of interpretations that children give to metaphor. Hence, the study was largely based on children's verbalized retrospection about the metaphor they read. These responses were categorized (see Chapter 5) in a manner similar to that employed by Squires, but with an emphasis upon how children understand written metaphor, rather than the broader context of literature appreciation.

Finally, this study employed more than one procedure for studying the reading of metaphor. Too often, research studies have been limited by a single dimensional approach to the problem. The combined use of categorized verbal retrospections and the test of metaphorical understanding (Associated Commonplaces Test) in this study was intended to provide a more complete picture of the process of understanding metaphor.

CHAPTER 4

THE EXPERIMENTAL DESIGN

This chapter will describe the sample, the selection of metaphors, the pilot study, the method of obtaining protocols, the instruments and the statistical treatment of data.

I. THE SAMPLE

The sample consisted of eighty children (40 boys and 40 girls) selected from grade 6 and grade 8 of the Edmonton Public School System. The 40 grade 6 children were selected from the two grade 6 classes of an elementary school, while the 40 grade 8 children were selected from the six grade 8 classes in a junior high school. In other words, the population sampled at grade 6 was smaller than the one sampled at grade 8, which leads to some differences in the nature of the samples.

Grade	Age	Blishen Rating	Reading Percentile
6	11-7	66.20	55 (S.T.E.P.)
8	13-6	68.62	95.7 (Davis)

Figure 1 - Description of Sample

Figure 1 summarises information about the sample. Blishen's (1967) occupational scale was used to produce a rating of socioeconomic status for each subject. The average Blishen rating for grade 6 was

66.20 and the average Blishen rating for grade 8 was 68.62. As can be seen from the Blishen rating, both schools were located in a primarily upper-socioeconomic status area of the city. Parents were primarily from the professional classes such as lawyers, doctors and university professors. The age range of the grade 6 sample was 10-3 to 12-3 with a mean of 11-7, while the age range of the grade 8 sample was 12-4 to 14-0 with a mean of 13-6. The reading percentile range for the grade 6 sample (on the S.T.E.P. reading test) was from the sixth percentile to the 93rd percentile with a mean of 55 percentile points. The reading percentile range for the grade 8 sample (on the Davis 2B reading test) was from the 90th to the 99th percentile, with a mean of 95.7 percentile points. The grade 6 sample was clearly more heterogeneous in reading achievement than the grade 8 sample, which was highly superior. It should be noted, however, that two different tests were employed so that the percentile ranks are not directly comparable. However, the smaller population sample at the grade 6 compared to the larger population sampled at the grade 8 level, means that the upper end of the distribution (which was selected for this study) included subjects closer to the norm in grade 6.

The sample was deliberately selected from a higher socioeconomic status group since the present study necessitated relatively fluent verbalizations which were examined in some detail. It was thought desirable to avoid subjects who might be threatened or have difficulty with the type of task being presented. Good rapport was necessary between experimenter and subject and it was anticipated that this would be more readily achieved with a sample from this socioeconomic status level. Considerable research (Bernstein, 1960; Deutsch, 1965; John, 1963; Pavenstedt, 1967) indicates that children from lower socioeconomic status homes have difficulty in expressing their ideas verbally, especially in structured situations. The author was of the opinion that the nature of his research, which was exploratory and required introspection from subjects, indicated that it was more important to have a sample that was fluent verbally than a sample which was representative of the population. It should therefore be noted that the present samples do not purport to be representative of the particular grade levels chosen.

In addition to selecting schools in upper socioeconomic levels of the city, selection was carried out by the classroom teachers or language specialist. The grade 6 children were selected by their classroom teachers on the basis of their evaluation of the children's achievement in reading and oral language as being above average. The grade 8 sample of forty children was chosen by the language arts coordinator on a similar basis. The children selected for the study were therefore somewhat superior for their grade level in reading and language, although this superiority was much more marked for the grade 8 sample.

Since the present study included an attempt to examine developmental differences in understanding metaphor, two grade levels were chosen so that comparisons could be made. Grade 8 was chosen because at this stage the children are at the formal operational stage of thinking and should be capable of the abstract cognitive processes necessary for understanding metaphor. Grade 6 was chosen as a basis for comparison. Children younger than this were found to have difficulty reading the metaphors and verbalizing their responses. Grade 6 also appeared to be suitable from a practical point of view, since the topic of figurative language has been formally introduced to these children a year before in grade 5. It could therefore be supposed that this was not the first time that children in the sample had been exposed to metaphor in children's literature.

II. SELECTION OF METAPHORS

The majority of the metaphors used in this study were selected from grade 5 curriculum materials. A list of the metaphors and their primary and secondary sources may be found in Appendix A. The writer did not attempt to ensure that the metaphors chosen were representative of those encountered by children in school language courses. Instead, passages by known authors who are acknowledged critically to produce "good" literature were selected. The present writer wished to use "effective" metaphors which could be expected to have an impact on the reader if they were properly understood, so poor, insipid writing was avoided.

A further factor which the writer considered in selection was related to the theoretical questions suggested by the literature. It can be argued that metaphors differ along a number of dimensions. Metaphors of varying quality were selected in this study in order to relate the nature of children's responses to types of metaphor.

The dimensions of metaphor were derived from some theoretical viewpoints. The first dimension, the simple-complex dimension, was based on Black's suggestion of a hierarchy of metaphors with "interaction" metaphor being much more difficult to comprehend. The second dimension, the common-unusual dimension, was based on the views of philosophers (Richards, Black, Henle) and psychologists (Berlyne, Bruner) who claimed that incongruity and surprise are more effective in producing cognitive change than familiarity. The third dimension, the concrete-abstract dimension, was included because developmental psychologists, such as Piaget, view sensory, perceptual "real" associcátions to be much more available for children than abstract, conceptual, "potential" associations. The fourth dimension, the connotative-denotative dimension, was related to Luria's discussion of the nominative versus the associative aspects of meaning. The author considered metaphors relying on connotative meaning to be more difficult to interpret than those involving mainly denotative meaning.

The following are the author's descriptions of the four dimensions of metaphor.

The Simple-Complex Dimension

Simple metaphors are those which can be most easily replaced by a literal phrase without loss of meaning. In terms of Black's views of metaphor, "substitution" or "comparison" metaphors are relatively simple. They have a relatively limited and easily defined set of associations.

Complex metaphors are those which resist translation into literal terms without loss of meaning. They tend to elicit or build fresh or unique concepts with elaborate and extensive meanings. In Black's view, "interaction" metaphors are complex in nature.

The Common-Unusual Dimension

Common metaphors are those which are found in fairly constant use in language and do not therefore evoke much surprise in the reader. Unusual metaphors employ unexpected or incongruous juxtapositions which evoke shock or surprise in the reader. They tend to be unique. An important consideration in this dimension is the juxtaposition of frame and focus; the words used may be extremely well known in their ordinary context, but the juxtaposition of frame and focus may be quite disparate. Unusualness lies mainly in the extent to which the comparison is unfamiliar.

The Concrete-Abstract Dimension

Concrete metaphors are those which evoke associations from the physical world. They rely on sensations, images, perceptions and actions, and tend to be fairly specific and definable in concrete terms. Abstract metaphors are more distant from the physical world, involve more interpretations, more generalized meanings, and a greater influence of ideation and conceptualization.

The Connotative-Denotative Dimension

A connotative metaphor is one which tends to evoke feelings and subjective impressions, to establish an atmosphere of some kind. A denotative metaphor is one which is a short-cut to defining or describing something. It is much less affective and contains much less diverse association and relies on criterial aspects of meaning. Its emphasis is on accuracy of conveying an impression rather than mood.

Ten metaphors were selected which represented different qualities and which fell upon different points on the four dimensions (in the author's judgement). The metaphors were then presented to ten judges, all graduate students in education and experienced teachers, with detailed instructions (see Appendix B). The judges were asked to rate each metaphor on a scale from one to three on each dimension, with one and three representing the extremes of each dimension and two a neutral point. The judgements are presented graphically in the next chapter.

The detailed results of the ratings of metaphor are to be found in Chapter 7, along with a discussion of children's responses to different metaphors. The judges' ratings are not intended as measures of reliability. The present writer believes that there are some metaphors which cannot be reliably placed at a point upon a dimension. For example, a metaphor may be both concrete and abstract, and either the concrete or abstract aspect of the metaphor may be perceived by a particular reader. Hence, one would not expect a neutral judgement on such a metaphor unless the reader perceived both concrete and abstract qualities in the particular metaphor. The metaphors were originally selected with the intention of including metaphors of varying qualities, and the ratings of judges tend to support the view that the chosen metaphors represent a spectrum of characteristics which are of interest to this study. The procedure of attempting to classify the metaphors used allowed the examination and comparison of different categories of responses evoked by each metaphor and discussion of possible differences in metaphors which could have elicited any observed differences in comprehension.

III. THE PILOT STUDY

A small informal pilot study was carried out with children from grades 4, 5, and 6. Two children from each grade level were questioned with an early form of the interview, while three more children from grade 6 were presented with the interview in an approximation of its final form. The purpose of the pilot study was first to determine the most appropriate age level for the younger sample. It was necessary to examine the degree of difficulty of the reading material presented. While some of the passages were selected out of curriculum material at the grade 5 level and the others appeared to be comparable in difficulty, the author wished to ascertain that at the grade level he sampled there was relative ease of word recognition. It was anticipated that decoding problems might obscure the question of higher level meaning in reading metaphors which was the focus of the study. The writer also wished to determine whether the selection of metaphors was appropriate, not only in difficulty, but in motivational appeal. The choice of metaphorical passages of sufficient interest to both grade 6 and grade 8 children was important to ensure the continued attention and cooperation of the children during the testing session. It was also necessary to determine whether the younger subjects were capable of verbalizing in the manner required by the author.

As a result of the pilot study, the author selected grade 6 for his younger sample since at grade 4 and grade 5 the children appeared to experience difficulty in reading literally some of the passages. Moreover, the grade 4 and 5 children produced quite meagre verbal responses. The metaphors selected appeared to sustain the interest of children during the session.

The second aim of the pilot study was to examine the effectiveness of the interview approach for obtaining the kind of information required. The writer also used the pilot study to design the most effective questions, examples and verbal instructions for encouraging the subjects to verbalize appropriately. In other words, the pilot study helped the writer to formulate a simple plan for conducting the interview (the details of the interview are to be found in Appendix C).

IV. METHOD OF OBTAINING PROTOCOLS

The main procedure employed in this study to examine children's understanding of metaphor was verbal retrospection. The method was chosen primarily because it allows the subject to give responses in depth, and because it enables the experimenter to explore further various aspects of the child's understanding or lack of understanding. In addition, verbal retrospection minimizes the extent to which the child's responses are fitted into a preconceived idea of what the experimenter expects the responses to be. Goldman argues: "This (verbalizing) makes for a wider differentiation of response, reveals obscurities, explores them, and gives a more accurate picture in depth of a child's concept" (1964:75).

Fareed (1971) claims that a number of reading researchers have used a form of retrospection to illuminate some facets of the reading process. The procedure was found to be highly promising in identifying various aspects of the reading process. Goldman feels that an important advantage of an interview approach to examining children's concepts lies in the enhanced motivation it produces. He suggests that being asked questions by a friendly, interested adult is flattering to many children and results in less anxiety and hostility than the use of standardized test material. Moreover, the experimenter can readily provide the child with feelings of success.

In the present study, the interview was structured to the extent that identical instructions and questions were initially given to each child but unstructured in that the subjects responded freely to questions and the experimenter followed through a child's responses by asking further questions.

The protocols were collected individually in a quiet room in each school. Each interview was tape-recorded and was later transcribed verbatim into typescript. Several minutes were spent at the start of each interview establishing rapport with the student. This was done by discussing school functions, sports or TV shows with each subject. At this stage the researcher emphasized that the experiment had no bearing on school and would in no way affect marks, grades or report cards.

When the subject was judged relaxed by the interviewer, the instructions were given (see Appendix C). These instructions were constructed as a result of the pilot study. It was thought that grade 6 children needed some form of practice to encourage verbal fluency. Such practice was also thought necessary to get the children to verbalize as many of their responses as they could and not to suppress any because they seemed too unusual. In other words, the experimenter wished to avoid some of the stock "school" answers which children routinely give and which they feel are expected of them. Instead, the experimenter wished to evoke more diverse and individualistic interpretations which might be unacceptable in the classroom setting. It was very difficult to elicit any description of feelings of reactions to what was read at a "gut" level from these preadolescent children. The instructions were phrased with particular intent to attempt to encourage subjects to verbalize such feelings. The child read two paragraphs, both of which contained descriptive and affective content (the paragraphs can be found in Appendix C). Questions such as "What does the word 'ooze' feel like to you?" "Does this paragraph make you happy? Why?" were asked so as to encourage the child to develop answers that were not literal in type.

After the practice session, the metaphors were given to the child in random order. Each subject was asked to read the passage silently and then read it aloud. The oral reading allowed the experimenter to check that problems of decoding were not hindering interpretation and also to check that the subject had read the whole passage. After the subject had read the passage, the experimenter initially asked three questions:

(1) "What is this all about?"

(2) "What does (here the metaphorical phrase was read) mean?"

(3) "Just imagine that I was a famous artist. What sort of picture would I paint about this scene?"

Question 1 was designed to elicit a general response to the whole passage, question 2 focused on the precise meaning of the metaphor, while question 3 was intended to show the imagery the passage evoked in the subject. Further follow-up questions were asked by the interviewer during the process of verbalization by the subject. These probing questions, such as "Why?", "What do you mean by that?", "Can you tell me any more about that?", were used to encourage further verbalization by subjects and to explore the depth of the child's understanding. All responses were tape-recorded.

V. INSTRUMENTS

The Associated Commonplaces Test

An instrument called the Associated Commonplaces Test was devised by the author in order to examine the manner in which children assign meaning to metaphors. Essentially, the Associated Commonplaces

Test arises out of Black's view of metaphor as the construction of a new network of meanings for the main subject of a metaphor from the system of meanings attached to the subsidiary subject. Black argues that "metaphor suppressed some details, emphasizes others - in short organizes our view." By asking a subject to choose from a variety of associations for the subsidiary subject, the experimenter attempted to investigate what kind of meanings are suppressed and which emphasized. In particular, by questioning the subject about his choice, the experimenter attempted to determine the manner of "dynamic cognitive action" by which the subject selects meanings and makes the link between the selected meanings of the subsidiary subject and the main subject of the metaphor.

The Associated Commonplaces Test consisted simply of a list of fourteen possible associations for the subsidiary subject of each metaphor, chosen by the author on the basis of his interpretation of the meaning of the metaphor and dictionary definitions. (see Appendix D). These associations differed in their degree of appropriateness to the main subject of the metaphor. Some of the associations appear to be appropriate to both subsidiary and main subject of the metaphor while other associations are appropriate only to the subsidiary subject of the metaphor. Also included in the list were a number of words which have no apparent relation to the subsidiary subject. For example, for the metaphor "the fog comes on little cat feet," appropriate associations were "silent" and "graceful", inappropriate associations "jump" and "scratch", and unrelated words were "thump" and "horn". There was no restriction on the number of words that the subject chose, but he was required to explain the reasons for his choice, and the scoring of the test was heavily based on the adequacy of the explanation. The instructions (see Appendix D) required the subject to choose the words linked with the subsidiary subject of the metaphor (e.g."fog") which fit in with his meaning of the metaphor.

The writer chose to use the Associated Commonplaces Test because it seemed to reach certain things that the unstructured verbalizations did not. There are some children who, despite all attempts to encourage them, do not find it easy to verbalize. They often say when asked about the meaning of a passage or metaphor that they "can't put it into words." The Associated Commonplaces Test gave them an added stimulus to produce and gave the experimenter a better idea of where any difficulty in understanding lay, whether in the failure to understand the literal meaning of the subsidiary subject for example, or in the failure to select the appropriate commonplace. For example, in a metaphor like "bandaged town", very few children do not understand the literal meaning of "bandaged", but very many children do not understand the metaphor because certain inappropriate associations to "bandaged" are so strong for them. The Associated Commonplaces Test was designed to find out more about children who respond to metaphors with "don't know" answers or who produce meagre verbalizations. The task of choosing an association seems to provide some structure around which the subject can rationalize his understanding or lack of understanding of the metaphor. In addition, it was thought that the Associated Commonplaces Test would be a useful correlate to the data produced in the interview, and an interesting basis of comparison with it. The reliability data for this test are to be found in Chapter 5.

Look at Literature Test

The N.C.T.E. Test, A Look at Literature (see Appendix E for copy of test) was administered to the sample in large groups. The test was given as a measure of literary appreciation to see whether the results obtained from a paper and pencil test differed markedly from those obtained by retrospective techniques or from the Associated Commonplaces Test. The Look at Literature Critical Reading and Appreciation Test was chosen because in the opinion of the experimenter the passages it uses and the questions it asks are closer to the author's study of metaphor than other tests examined.

The Look at Literature Test consists of fourteen paragraphs which fulfilled five criteria: literary types representing different types of prose and poetry; length suitable for inclusion in the test; literary richness was required to the extent that the selection had to contain enough material for four multiple-choice questions; appeal to children; difficulty appropriate to fifth grade students. Each selection has four multiple-choice questions, with four foils in each item. The subject is required to select the one which is most appropriate in his opinion. According to the manual, the test is designed to study children's interpretive responses to imaginative prose and poetry. The Look at Literature manual states that "while some questions are designed to test comprehension of meaning, a large number are concerned with the creative extension of meanings and the awareness of literary qualities" (p.1).

The test is administered in two halves: the first part is read aloud by the examiner while the children follow along in their copy of the test booklet, while the second half is completed by the children reading the material themselves. Because the test was published in 1969, standardized norms are not yet available. The authors claim that it has content validity since it was judged adequate by a series of "persons well qualified to judge the relationship of test content to teaching objectives" (p.22).

The test has a Kuder-Richardson reliability of 0.70 for Part I and 0.74 for Part II, and a correlation of 0.67 with S.T.E.P. for Part I and 0.73 for Part II.

It is the author's view that the lack of standardized norms does not detract from the test's value in an experimental study such as this. The test was used to obtain a ranking of the students and to determine what relationship their performance on this test has to their verbalizations about metaphor and to the Associated Commonplaces Test. In other words, the author wished to discover whether those children who verbalized most freely and creatively in retrospective situations were able to achieve as well in a conventional paper and pencil test with a multiple-choice format for testing literary appreciation.

Retrospective-Verbalization Classifications

An interview was designed to elicit retrospective-verbalizations from each subject as described above. However, there was no 'a priori' system of categorizing the responses before the data was collected. The next chapter (Chapter 5) gives details about the derivation of categories to analyze the verbalizations.

VI. STATISTICAL TREATMENT OF DATA

The data of this study consisted of the following scores for each subject:

(1) Look at Literature Test scores.

(2) Associated Commonplaces category scores and a weighted score.

(3) Verbalization category, sub-category and weighted scores.

Totals, means and standard deviations of these scores were calculated for the total sample, and for grade 6 and grade 8 separately. In addition, Pearson product-moment correlations between the Look at Literature scores, the Associated Commonplaces scores, and the verbalization scores were computed. T-tests to compare the means of the grade 6 and grade 8 samples were performed on all of the above scores.

As well as examining the category and overall scores for each person, tallies of the number of responses falling into each category on the Associated Commonplaces and verbalizations were carried out separately for each of the ten metaphors. In other words, each metaphor produced a certain number of responses falling into different categories and these were counted over the total sample and over the grade 6 and grade 8 samples.

SUMMARY

This chapter includes a description of the age, socio-economic status, reading achievement and verbal ability of the sample. The rationale for selecting particular metaphors is discussed, the pilot study described and the interviewing procedure outlined. Also, the Associated

Commonplaces Test and the Look at Literature Test were discussed and the method of statistically analyzing scores presented.

CHAPTER 5

ANALYSIS OF DATA

This chapter will describe the manner in which the verbal-retrospective data were classified into categories.

I. DERIVING THE CATEGORIES

Verbalization Data

The verbal retrospective data in this study were categorized 'a posteriori'. It was decided not to use predetermined categories in order to avoid the imposition of an order on the data which did not exist in reality. Since the research was undertaken with a desire to avoid some of the problems arising out of constraining children's responses to fit the expectations of the experimenter, it seemed most appropriate to attempt classification of the data when all the data were collected.

Accordingly, when the experimenter had completed transcription of the protocols, he selected at random the protocols of four grade 6 and four grade 8 subjects and examined them carefully. It appeared immediately evident to the experimenter that there were certain broad classes of responses into which children's answers could naturally be classified. On the lowest level were statements indicating inability to respond to the passage; on the next level were restatements or repetitions of the text; finally, there were responses which indicated attempts to go beyond the written word and find a wider meaning, placing the passage and its metaphor into a larger context. Of the responses which departed from the text, the writer found a logical division between initial interpretive statements involving inference and elaborations of these through imagery, affect and a number of other devices. Hence, the writer began with the idea of four broad classifications: Irrelevant responses, Translation responses, Interpretive responses and Elaborative responses. There seemed little difficulty in placing a response in one of these broad categories. Further division of the responses was obviously necessary.

The Irrelevant category contained clearly inferior responses, while the Translation category seemed a relatively low level verbatim paraphrase of the passage. Within the Interpretive and Elaborative categories, however, there was a good deal of variation in the quality of responses. Interpretive and Elaborative statements varied from clear misinterpretations or totally inappropriate elaborations to highly sophisticated use of subtle context clues and imaginative descriptions. Responses in the Interpretive and Elaborative categories were then subclassified, depending on the degree of sophistication of the response. In general, responses to these categories were labelled as correct, logically possible and incorrect. (see p. 71-74 and Figure 2 and 3, p. 77 for further explanation).

As each response was examined, a number of further subdivisions appeared logical within Interpretive and Elaborative responses. For example, Interpretive responses most frequently involved the use of context clues in the embedding passage, but sometimes seemed obviously derived from the individual's private experience. Responses were sometimes to the whole passage and sometimes to the particular metaphorical statement. (This was to some extent a result of the questioning since the experimenter asked each subject to directly interpret the metaphor after he had made a general statement about the passage). Within the Elaborative category, the subjects varied in their manner of elaboration. There were a good many statements where the subject gave physical details, often in response to the interviewer's question concerning what kind of picture the passage suggested. Other elaborations included the use of evaluative or descriptive language, generalization, illustrations and statements relating to affective reactions.

A detailed definition of the categories and sub-categories is provided below. These categories were arrived at after a detailed examination of a small number of protocols. The protocols of all subjects were then classified into these categories, a procedure which appeared to the experimenter to satisfactorily handle all of the responses given by subjects without undue constraint. The first step in analyzing the protocols was to mark off the protocols into separate responses. A response was defined according to Squires' procedure: "...the smallest combination of words which conveyed the sense of a single thought" (Squires, p. 17).

For example, five responses occur in the following passage as indicated by the dividing lines: "They were bright and alive/they looked exciting./It gives you the same effect as a candle does/you get the feeling that it's alive/sort of dancing/."

II. THE CATEGORIES

Verbal Retrospections

Group A: Irrelevant responses included lack of response, tentativeness of response and repetitions.

A1. "Don't know" or "don't understand" or "it doesn't make sense" responses. This category also included responses where the subject tails off after beginning a sentence so that the statement doesn't make sense.

A2. Tentativeness. The subject qualified a verbalization with "maybe" or "it might be" or "well I don't really know but... ."

A3. Repetition. The subject simply repeated something he has already stated without adding anything further.

Group B: Translation responses were statements of fact taken directly from the passage, unelaborated, without any sign of interpretation or inference.

B1. Repetition using the same or very similar words or syntactical form, e.g., metaphor 10 (invades) "She sits looking out the window."

B2. Slight re-wording of information which is given in the passage, e.g., metaphor 1 (tongues). "A big wave is coming in."

Generally, if there was any difficulty in deciding whether a B2 or a C1 had occurred it was necessary for the scorer to judge whether the re-wording or use of synonyms involved in B responses involved any interpretation. If there was any gap between what the subject said and what was said in the passage, if the reader had gone beyond assigning meaning and decoding the passage even in a fairly simple inference, the responses were scored as C responses.

Group C: Interpretive responses, using information which is in the passage to make inferences about the meaning of the passage. These Interpretive responses could be correct, logically possible, or incorrect.

C1. The correct logical use of the context to make an inference which appeared (from a reading of the larger context by the judges) to be in accord with the writer's purpose and intended meaning. A C1 was a response which involved something which had never been explicitly stated in the passage, e.g., metaphor 9 (hard stones bit), the subject's response is "It's very cold" and the passage contains clues such as "they shivered" indicating the coldness. Metaphor 6 (ghosts with their breath), the response is "They've rung the door bell" although this is never actually stated in the passage. Again, clues are given, such as that they were waiting in the porch.

C2. The correct logical use of the subject's own experience to make an inference from the passage. It is clear that the use of experience will occur in many responses which were scored as such. In order to be classified as a C2, the response had to include a direct statement of something obviously experiential, e.g., metaphor 3 (cat feet) - "That's probably like in San Francisco...."

C3. The logically possible use of the context to make an inference. This category was reserved for cases where the subject made inferences which did not actually contradict anything said in the passage but which seemed to the rater to be somewhat outside the author's intent, purpose or meaning as judged by the larger passage, e.g., metaphor 10 (evening invade) - "She lives in the city." There is nothing in the passage to say that she couldn't have lived in the city yet there is nothing very strong to indicate that she does. The response does not really add to the meaning of the passage in an important way.

C4. The logically possible use of the child's own experience to make an inference. (As for C3 except that these responses seem to come from experience). Again, this category would include responses which did not directly contradict information given in the passage but did not seem to fit in exactly with the writer's intent, e.g., metaphor 6 (ghosts with their breath), the subject responds by saying "Maybe Halloween, they may be going out trick or treating." Since the children in the passage were waiting in the porches in the cold this was not an unreasonable interpretation but it was obviously not in keeping with the writer's intent.

C5. This category referred to responses which related to the metaphorical phrase rather than to the wider passage. A response was classified as a C5 if a logical interpretation of the metaphor using the associations (associated commonplaces) of the figurative expression was given. This classification was used for relatively unsophisticated or obvious interpretations of the metaphor where the subject did not seek the more remote associations of the figurative expression in order to get a better understanding of the metaphor, e.g., metaphor 9 (stones bit) - "The stones might be digging into their back" and metaphor 4 (her eyes were candles) - "They were shining."

C6. This category was also for responses relating to the metaphorical phrase, but for responses which are on a more sophisticated, less obvious level than C5's. In these responses subjects gave more reflective types of answers based on the associations of the figurative expression but in a more divergent manner than for a C5 type of response.

(There was evidence of the "cognitive jump" that Black's interaction type metaphor implies); e.g., metaphor 5 (bandaged town) - the subject's response was "It's all enclosed, isolated." A judgement about whether a response was a C5 or C6 was usually easy to make based on the frequency with which a particular interpretation occurred. For instance, most children made a correct interpretation of "Bandaged town" as meaning "covered with snow" (a C5 response), but few subjects expressed the idea of separateness, snugness and isolation (C6 responses).

C7. Misinterpretation of the passage using context clues incorrectly. This category was similar to C1 and C4 but this time the interpretation was wrong, e.g., metaphor 7 (possessed all earth) - "It's about a bee." This latter response was actually a literal interpretation of another metaphor in the passage comparing the motor-car to a bee. Another response to this metaphor which was a C7 was "They could hear a train going 'poop-poop'."

C8. Misinterpretation of the passage based on egocentric use of personal experience (similar to categories C2 and C4 but incorrect), e.g., metaphor 9 (hard stones bit) - "These people were sleeping at night and the furnace was turned down." Another example from the same metaphor was "If you stepped on a stone it would go in." The latter response shows how the subject was unable to detach himself from his own experience of walking on stones in order to interpret the passage correctly as being about lying on stones.

C9. Misinterpretation by using inappropriate commonplaces for the metaphor (cf. C5 and C6 but incorrect); e.g., metaphor 5 (bandaged town) - "It's an old town." Here the subject has taken bandaged to imply oldness, shabbiness, etc., a fairly common misinterpretation of this metaphor.

C10. Simple repetition of the metaphorical statement in the form of a comparison without explanation, e.g., metaphor 1 (tongues of water) - "Sprays of water are like tongues."

C11. Misinterpretation of the metaphor due to the subject taking the figurative expression literally, e.g., metaphor 3 (cat feet) - "There's a cat down by the harbor watching the ships come in and out."

It was necessary to clarify the distinction between C and D responses. It was assumed that an idea which was introduced for the first time was an Interpretive response so such ideas received some type of C classification. If a subject went on to elaborate this idea these responses were classified as D's. Responses which were obviously affective or imagery were all classified as D's.

Group D: Elaborative Responses, taking ideas stated and adding more detail by describing emotions, using concrete imagery, making further generalizations of ideas given or using descriptive or evaluative language to represent the scene to the questioner. D responses are primarily those which relate to the mood or atmosphere of the passage.

D1. The use of evaluative language to describe the scene; painting a verbal picture of the subject's impression, e.g., "It's a beautiful lady," "It's a very picturesque scene," "It's very gloomy." Elaborations in D1 were those which were judged by the rater as correct or in keeping with the intent of the passage.

D2. The description of how the subject felt or how the subject thought someone else would feel about the passage. This category often involved the use of adjectives describing feelings, e.g., "It's a joyful town," "The men were scared," "It's pretty scary." D2 responses again were those judged to be correct.

D3. Making a summary or generalization, a brief comprehensive statement as a result of having considered the ideas which the passage had presented, or which had been presented by the subject. (It was important to distinguish these responses from C responses. C responses involved the introduction of an idea for the first time). e.g., metaphor 7 (possessed all earth) - "It's an ego trip."

D4. Giving an illustration or example out of personal experience (direct or indirect) to elaborate on the passage. This category related to relevant illustrations, e.g., metaphor 8 (frowning arch) - "It's like in Robin Hood in olden times."

D5. The supplying of additional concrete details or factual information about the passage. These responses were typically found in response to the question where the subject was asked what kind of picture should be drawn of the scene represented by the passage. D5 responses were those judged to be correct, e.g., metaphor 10 "The avenue is getting covered with shadows."

D6. Irrelevant or inappropriate evaluative or descriptive passages, which appeared to be outside the author's intent, e.g., for "bandaged town" - "It's a very ugly town." (Analagous to D1 but obviously incorrect).

D7. Inappropriate or irrelevant use of feelings, e.g., metaphor 5 (bandaged town) - "Everyone is feeling very sad." (Analagous to D2 but obviously incorrect).

D8. Irrelevant or inappropriate generalizations, e.g., metaphor 7 (possessed all earth and air) - "It sounds like a fairy-tale."

(Analagous to D3 but obviously incorrect).

D9. Giving an illustration or example out of personal experience to elaborate on the passage, which was inappropriate or irrelevant, e.g., metaphor 9 (hard stones bit) - "Well, it's very cold like 'Jack Frost nipped...' ..."

D10. The supplying of concrete details or factual information which were not absolutely inappropriate but which were judged to be somewhat outside the author's intent. They were logically possible elaborations of the passage, e.g., "It's in a graveyard" for "frowning arch." (Analagous to D5 but less appropriate).

D11. Irrelevant facts or concrete details, e.g., metaphor 5 (bandaged town) passage - "Somebody is trying to get their car through and their car is stuck in the snow.", metaphor 4 (her eyes were candles) - "She's in the garden." (Analagous to D5 but obviously incorrect).

Figure 2 is a summary chart of C responses and Figure 3 is a summary chart of D responses so that the reader may see at a glance the organization of the categories.

	Correct or relevant (2)	Logically possible (1)	Incorrect or irrelevant (0)
Context	C1	C3	C7
Experience	C2	C4	C8
Metaphor	C5 and C6(3)		C9, C10, C11

Figure 2 - Interpretive Responses - Group C

	Correct or relevant (2)	Logically possible (1)	Incorrect or irrelevant (0)
Evaluation	D1		D6
Affect	D2		D7
Generalizations	D3		D8
Illustrations	D4		D9
Facts or details	D5	D10	D11

Figure 3 - Elaborative Responses - Group D

Following the scoring of the protocols, totals of responses in each major category were tallied and weighted scores for each individual were calculated on the following basis.

Scores were weighted to provide an impression of the quality of the individual's Interpretive and Elaborative responses and the total overall quality of the interpretation of metaphor. Weights were arbitrarily assigned to responses on the basis of the investigator's judgement of their quality. For example, C6 responses were given a weight of 3 because the focus of interest in this study was on complex interpretations of metaphor. Those categories assigned a weight of 2 were judged better than those assigned a weight of 1, usually because of some added organizational, logical or imaginative extension of the metaphorical passage. An impression of the relative quality of children's responses can also be obtained from examining the pattern of subcategory and category score. However, an immediate global impression is obtained from the weighted interpretive, elaborative and total weighted scores.

Each individual received:

(1) A Translation score - each B response was assigned one point so the Translation score was simply the total number of B responses.

(2) An Interpretive score - each C response in the Correct column of Figure 2 (with the exception of C6) was assigned a weighting of 2. C6 was assigned a weighting of 3. Each C response in the logically possible column of Figure 2 was assigned a weighting of 1 while the Irrelevant or Incorrect column was assigned a weight of 0.

Interpretive score = (3 x C6) plus (2 x (C1's, C2's, C5's)) plus (C3's, C4's).

(3) An Elaborative score - correct D's were assigned a weighting of 2, logically possible a weighting of 1 and incorrect a weighting of 0.

Elaborative score = (2 x (D1's, D2's, D3's, D4's, D5's) plus (D10's).

(4) A total score - the combination of Translation, Interpretive and Elaborative scores.

Total score = Translation score + Interpretive score + Elaborative score.

Associated Commonplaces Test

The responses to the Associated Commonplaces Test were scored according to whether they fell into any of the following categories. These categories were pre-determined by the author based upon his interpretation of Black's explanation of metaphor (see Chapter 2 for general theoretical background and Chapter 4 for specific ways in which Black's ideas were incorporated in the Associated Commonplaces Test.)

Category 1: Failure to understand literal meaning of figurative term. For example, in metaphor 1 "tongues of water," the subject didn't know the meaning of the word "tongue". A response was assigned to this category if the subject chose unrelated words such as "house" for "tongues of water". (If there was a logical link made between the supposedly unrelated word and the literal and figurative parts of the metaphor, the response was classified as a IV - this did happen on one or two occasions).

Category II: Understanding of the literal meaning of the figurative term (e.g., understands "tongues") but not understanding the meaning of the term in its metaphorical context. Hence, the child can choose associations appropriate to "tongues" but not necessarily also appropriate to "water," e.g., "foreign". A response was assigned to this category if the subject chose associations appropriate to the literal but not to the figurative use of the metaphor. (Again, if a logical link was made, the response was classified as a IV even though the link had not previously been apparent to the tester).

Category III: Understanding of the metaphor on an intuitive, global, diffuse level. The child can choose the appropriate associated commonplaces but is unable to give an adequate explanation for the shared meaning between the figure and frame of the metaphor. For example, the child chooses the appropriate commonplace "tapering" (for "tongues of water") but is unable to explain the reason, or gives an incorrect explanation why the choice is appropriate to both "tongues" and "water". A response was assigned to this category if the subject chose appropriate associations but could not explain the link.

Category IV: Mature understanding of the metaphor. The child can both select appropriate associated commonplaces and explain the reasons why his selections apply to both parts, figure and frame of the metaphor.

The four categories were perceived as a hierarchy with category 4 as the most sophisticated response at the top of the hierarchy and category 1 the least sophisticated at the bottom. In order to express the quality of an individual's response to the Associated Commonplaces Test, a single score, a weighted Associated Commonplaces Score was produced for each subject. A weighting of 2 was assigned to category IV responses, a weighting of 1 to category III responses and a weighting of 0 to category I and II responses.

Associated Commonplaces Score = (2 x category IV's + category III's).

III. RELIABILITY OF SCORING

Following the scoring of the protocols, the experimenter consulted with another judge who was to act as an independent rater. The experimenter described the categories, giving examples and going through some pilot protocols with the judge in order to provide the necessary training for the judge. Each category was operationalized as carefully as possible to avoid disagreement in classification. Four grade 6 subjects and four grade 8 subjects were randomly chosen in order to make a reliability check on the scoring of both the verbalization data and the Associated Commonplaces data. Agreement between the experimenter and the independent rater was computed using the Arrington formula as reported by Feifel and Lorge (1950). The formula is

$$\frac{2 \times \text{agreements}}{2 \times \text{agreements plus disagreements}}$$

Reliability indices are reported in Table 1. The reliabilities for each subject on categories A, B, C, and D of the verbalization data and on the Associated Commonplaces Test are given separately. Mean inter-scorer reliability for category A was 92.5%; for category B, 83.7%; for category C, 82.0%; and for category D, 78.0%. These figures seem to indicate that the scoring of categories can be used relatively consistently by different judges. There was slightly more difficulty in judging reliably categories having a larger number of sub-categories

(categories C and D) but the figures appear to fall within an acceptable range. The mean reliability for Associated Commonplaces Test scoring was 91.4%, a figure which suggests good agreement between judges on the scoring of this test.

SUMMARY

This chapter has consisted of a description of the 27 subcategories and four major categories which emerged from verbal-retrospective responses. The four categories of the Associated Commonplaces Test were also described. A rationale for using weighted scores was given, and the procedure for weighting was described. Finally, the reliability of the scoring of both verbalizations and Associated Commonplaces was presented.

TABLE I

INTER-SCORER RELIABILITY EXPRESSED AS PERCENTAGES

	Verbalization categories				
	A	B	C	D	Associated Commonplaces
Subjects (Grade 6)					
1	100.0	66.7	77.6	72.3	83.4
2	80.0	100.0	94.0	97.0	97.0
3	83.5	75.0	84.0	83.0	83.5
4	100.0	67.0	65.0	67.5	100.0
(Grade 8)					
5	80.0	100.0	67.0	[illegible]8.8	
6	100.0	77.0	85.0	94.0	95.0
7	100.0	100.0	80.0	72.5	92.5
8	100.0	84.0	82.4	75.0	81.4
Means	92.5	83.7	82.0	78.5	91.4

CHAPTER 6

QUANTITATIVE FINDINGS

This chapter will present the quantitative results of the data analysis under the following headings:

1. The Associated Commonplaces Test - means, totals and standard deviations for the category and weighted scores of the whole sample; means, totals, standard deviations of the grade 6 and grade 8 samples and t-tests comparing the means of grade 6 and grade 8.

2. The Verbal Retrospective Data - means, totals and standard deviations for the category and weighted scores of the whole sample; means, totals, standard deviations of the grade 6 and grade 8 samples and t-tests comparing the means of grade 6 and grade 8.

3. Correlations - correlations between mean category and weighted scores on the Associated Commonplaces test, the mean category and weighted scores for the verbal retrospective data and the Look at Literature test.

I. THE ASSOCIATED COMMONPLACES TEST

Table 2 presents the total number of responses recorded for different categories (see p. 61) of the Associated Commonplaces test, the mean number of responses in each category per person, the mean overall score and the standard deviations of category and overall scores. These data refer to the total sample.

The most responses were found in category 4 (1337), then category 3 (580), then category 2 (302) and the smallest number in category 1 (46). Approximately 58% of the responses made by subjects fell into the most superior category of the Associated Commonplaces Test. That is, most responses indicated an ability to select appropriate commonplaces from the subsidiary subject of the metaphors and relate them to the main subject of the metaphors. The mean (16.72) and the standard deviation (6.72) suggest that about 2/3 of the sample made between 10 and 23 category 4 responses.

TABLE 2

TOTALS, MEANS AND STANDARD DEVIATIONS OF THE TOTAL SAMPLE ON THE ASSOCIATED COMMONPLACES TEST

N=80	Total	Mean	Standard Deviation
Category 1	46	0.56	1.30
Category 2	302	3.78	3.81
Category 3	580	7.24	4.29
Category 4	1337	16.72	6.72
Overall Score		40.35	12.70
Total Associated Commonplaces Responses	2265	28.43	8.47

The next most frequent response which occurred about 25% of the time was the category 3 response. In other words, about one quarter of subjects' responses indicated an ability to select appropriate associated commonplaces but an inability to explain the basis of the choice.

The mean (7.24) and standard deviation (4.29) shows that about 2/3 of the sample made between 3 and 12 category 4 responses

Category 2 responses made up about 13% of the total responses. Hence only a relatively small number of responses occurred where the subject chose an associated commonplace which was inappropriate to the main subject of the metaphor. The variability (mean-3.78, standard deviation-3.81) was between 0 and 8 for about 2/3 of the sample.

The most inferior response, category 1, occurred only 46 times over the whole sample or about 2% of the total. Hence only a few responses indicated that the subject did not understand the literal meaning of the subsidiary subject of the metaphor. The majority of the sample (2/3) scored between 0 and 2 on category 1.

In general then the figures on the Associated Commonplaces over the whole sample indicated that the majority of responses (58%) were on the most sophisticated level revealing not only a correct choice of commonplace but an ability to explain the choice. There were fewer and fewer responses as the hierarchy is descended from category 4 to 1. Many responses (25%) show an ability to choose an appropriate commonplace without explanation, while somewhat fewer (13%) responses reveal choice of commonplaces which do not relate to the main subject of the metaphor and a much smaller number (2%) indicate misunderstanding of the metaphor on the most obvious level - failure to understand the meaning of the subsidiary subject.

Altogether, the 80 children in the sample made 2265 responses to the Associated Commonplaces Test. In other words there were about 28 responses per child. The standard deviation (8.47) indicates that about

2/3 of the sample made between 20 and 36 responses on the Associated Commonplaces Test. Hence the subjects varied a good deal in the number of choices they made. The instructions gave subjects freedom to choose as many or as few words as they wished and these data seem to suggest that the subjects did not feel constrained to choose a particular number of words on the Associated Commonplaces Test.

Table 3 shows the Associated Commonplaces Test data for grade 6 and grade 8 separately. The direction of differences between grade 6 and grade 8 is as would be expected. First the grade 8 sample made significantly (p = 0.04) fewer category 1 responses than the grade 6 sample and significantly more category 4 responses (p = 0.02). Grade 8 had slightly, but not significantly, fewer category 2 and 3 responses than grade 6. Grade 6, then, were more likely than grade 8 to choose totally inappropriate words in response to the Associated Commonplaces Test and less likely to be able to select and explain appropriate commonplaces for the metaphor. This superiority in the Associated Commonplaces for grade 8 is reflected also in the significantly (p = 0.01) higher overall weighted score for the older children. The variability of grade 8 scores was somewhat less than for the grade 6 scores on category 1, 2 and 3 responses but not in category 4, overall and weighted scores. One would expect the grade 8 sample to be somewhat more homogeneous than the grade 6 sample since they represent a highly selected group on the upper end of the distribution.

TABLE 3

TOTALS, MEANS, STANDARD DEVIATIONS AND t-TESTS ON GRADE 6 AND 8 DATA FOR ASSOCIATED COMMONPLACES TEST

df - 78	Totals	Means	Standard Deviations	t	P ø
Category 1					
Grade 6	34	0.83	1.73	1.74	0.04*
Grade 8	12	0.33	0.53		
Category 2					
Grade 6	171	4.28	4.39	1.18	0.12
Grade 8	131	3.28	3.08		
Category 3					
Grade 6	306	7.67	4.82	0.91	0.18
Grade 8	274	6.80	3.69		
Category 4					
Grade 6	606	15.15	6.42	2.14	0.02*
Grade 8	731	18.30	6.72		
Overall					
Grade 6		37.38	12.14	2.14	0.01**
Grade 8		43.35	12.68		
Total Responses					
Grade 6	1120	28.00	8.08	0.45	0.32
Grade 8	1145	28.85	8.21		

* significant at 0.05 level
** significant at 0.01 level

The t values (see Table 3) reveal that the differences between mean category 2 and 3 scores for grade 6 and 8 are not significant. However, there was a significant difference between mean category 1 scores with the grade 6 sample having a higher score than the grade 8

ø Where exact values of P are output from computer programs they have been given in tables.

sample ($p = 0.04$). That is, the younger children had more tendency to choose irrelevant words on the Associated Commonplaces Test. The difference between mean category 4 scores for grade 6 and grade 8 was also significant ($p = 0.02$) showing that grade 8 children tended to make more sophisticated responses involving, not only the choice of an appropriate commonplace, but the ability to rationalize the choice. Grade 6 and grade 8 children chose about the same number of words on the Associated Commonplaces Test which was revealed by the absence of a significant difference between mean total response scores. As would be expected, grade 8 children showed an overall superiority on the Associated Commonplaces Test since their overall weighted score was significantly higher ($p < 0.01$) than the grade 6 children.

Summary of Associated Commonplaces Data

The quantitative data for the Associated Commonplaces Test show a tendency over the whole sample for the subjects to choose higher level responses rather than lower level responses. Most subjects had no difficulty in understanding the literal meaning of the metaphorical terms. The younger age group made more inferior responses indicating the choice of totally unrelated words, while the older group made more superior responses showing that they could not only choose an appropriate commonplace but understand the basis of their choice. In general both grade 6 and grade 8 samples made more category 4 responses than any other category (54% for grade 6 and 64% for grade 8), indicating that most children understood the metaphors at a relatively sophisticated level.

II. VERBAL RETROSPECTIVE DATA

Category A - Irrelevant Response

TABLE 4

TOTALS, MEANS, STANDARD DEVIATIONS ON TOTAL SAMPLE DATA FOR IRRELEVANT RESPONSES

(CATEGORY A)

Category	Total	Percentage of Total Responses	Mean	S.D.
A1	54	0.7	0.67	1.14
A2	52	0.7	0.65	1.19
A3	307	3	3.84	2.48
Total A	413	4	2.54	
Total Verbal Responses	7430		92.88	

It is apparent from Table 4 that Irrelevant responses occurred relatively infrequently. There were only 54 A1 (don't know) responses and 52 A2 (tentative) responses, hence these responses make up only a very insignificant contribution to the total responses (1.4%). The means and standard deviations ($\bar{X}_{A1}$ =0.67, S.D. = 1.14; $\bar{X}_{A2}$ = 0.65, S.D. = 1.19) indicate that most subjects made between zero and two A1 and A2 responses. Hence few responses were made which suggested that nothing was known about the passage or which signified lack of confidence in response or tentativeness.

A3 responses, namely those which repeat previous statements, were somewhat more frequent (T = 307). Most subjects made between one and six A3 responses. Repetitions were four times as common as other

Irrelevant responses.

Altogether Irrelevant responses comprise about 4% of all the responses made, and most Irrelevant responses were repetitions. It appears that redundancy in speech may account for most of these relatively inferior responses, rather than any basic lack of understanding. Most subjects at least attempted to respond to the metaphors.

TABLE 5

t-TESTS COMPARING TOTALS, MEANS, AND STANDARD DEVIATIONS BETWEEN GRADE SIX AND GRADE EIGHT SUBJECTS ON IRRELEVANT RESPONSES

(CATEGORY A)

	Grade	Total	Means	S.D.	t.	P.
A1	6	22	0.55	0.93	0.97	0.33
	8	32	0.80	1.32		
A2	6	14	0.35	0.58	2.31	0.31
	8	38	0.95	1.59		
A3	6	151	3.77	2.71	0.22	0.82
	8	156	3.90	2.28		
Total A	6	187	4.67			
	8	226	5.65			

* significant at 0.05 level.
** significant at 0.01 level

Table 5 shows the different means and standard deviations for Irrelevant responses for grade 6 and grade 8 separately. There were no statistically significant differences between the means of grade 6 and grade 8 responses on A1, A2 or A3 responses. That is, the grade 6 and grade 8 children gave similar numbers of "don't know", "tentative" and "repetitive" responses.

TABLE 6

TOTAL RESPONSES, PERCENTAGE OF TOTAL RESPONSES, MEANS, STANDARD DEVIATIONS FOR TRANSLATION RESPONSES (CATEGORY B)

Category	Total	Percentage of Total Responses	Mean	S.D.
B1	36	0.5	0.45	0.74
B2	304	4	3.80	2.85
Total B	360	5	4.25	3.17

Category B - Translation Responses

Table 6 reveals that Translation responses comprised about 5% of all responses made. B2 responses (T = 304), which involve rephrasing the information given in the passage, were a great deal more frequent than B1 responses (T = 36), (more exact reproductions of information in the passage). The means and S.D.'s ($\bar{X}_{B1}$=0.45, S.D.=0.74; $\bar{X}_{B2}$=3.80, S.D.=2.85) indicate that most subjects made about zero to one B1 responses and one to six B2 responses. Hence responses which give material taken from the passage with very little change were very infrequent, while re-wording responses were a great deal more frequent. In other words most Translation responses involved some processing of the information in the passage.

TABLE 7

TOTAL RESPONSES, MEANS, STANDARD DEVIATIONS AND T TESTS ON TRANSLATION RESPONSES FOR GRADE SIX AND GRADE EIGHT

(CATEGORY B)

Category		Totals	Means	S.D.	t.	P.
B1	6	10	0.25	0.54	2.48	0.01**
	8	26	0.65	0.86		
B2	6	119	2.97	2.97	2.70	0.008**
	8	185	4.62	2.50		
Total	B					
	6	129	3.22	3.21	3.03	0.003**
	8	211	5.27	2.81		

* significant at 0.05 level
** significant at 0.01 level

Table 7 shows that grade 8 produced significantly more ($p = 0.01$; $p = 0.008$) B1 and B2 responses than did grade 6. Grade 8 children therefore made more Translation responses than grade 6 children, suggesting that they are processing information presented in the passage to a greater extent than the younger children.

Category C - Interpretive Responses

Table 8 shows that Interpretive responses made up slightly more than half of all responses made by the total sample. The largest number of Interpretive responses were category C1 (T=1142) so interpretations of the metaphors were frequently correctly made through the logical use of context clues to make inferences. C1's comprise about 15% of all responses made. Most subjects made between 10 and 18 C1 responses ($\bar{X}_{C1}=14.53$, S.D.=4.35).

TABLE 8

TOTALS, PERCENTAGE OF TOTAL VERBALIZATION, MEANS AND STANDARD DEVIATIONS FOR INTERPRETIVE RESPONSES

(CATEGORY C)

Category	Total	Percentage of Total Responses	Mean	S.D.
C1	1142	15.40	14.53	4.35
C2	10	.14	0.12	0.33
C3	656	8.80	8.20	4.33
C4	40	.54	0.50	0.90
C5	626	8.42	7.83	3.36
C6	471	6.34	5.89	5.20
C7	266	3.54	3.32	3.18
C8	64	.86	0.80	1.55
C9	254	3.42	3.17	2.91
C10	116	1.56	1.45	1.34
C11	105	1.41	1.31	1.49
Total C	3784	51.00	47.30	7.87
Weighted C			70.73	20.05

C3's were the next most frequent responses (T = 656). These are responses which are logically possible but relatively inferior interpretations through context. Most subjects made between 4 and 10 C3 responses ($\bar{X}$ = 8.20, S.D. = 4.33) and these responses accounted for about 9% of all the responses made.

Interpretations through context clues were a great deal more common than interpretations through personal experience as illustrated by the small number of C2 (T = 10) and C4 (T = 40) responses. This type of response obviously does not cover the use of experience since it only included responses where the subject directly mentioned experiences when they were interpreting the metaphor. That is to say experiences must have affected other responses than C2's and C4's.

Direct interpretations of the metaphor on a fairly obvious level (C5's) were more numerous (T = 626) than sophisticated interpretations using more remote associations (C6; T = 471). While C5's made up about 8% of the total responses, C6's made up about 6% of all responses. Most subjects made between five and eleven C5 responses ($\bar{X}_{C5}$ = 7.84; S.D. = 3.36) and between 0 and 10 C6 responses ($\bar{X}_{C6}$ = 5.89; S.D. = 5.20). Hence there was somewhat greater variability in the number of C6 responses made than in the number of C5 responses made, probably because the C6 responses were more common amongst grade 8 children (see below).

Categories C1 to C6 comprised correct interpretations of metaphor on one level or another. Overall, correct Interpretive responses accounted for about 40% of all the responses made and about 78% of all Interpretive responses. Hence the majority of Interpretive responses indicated that the metaphors had been understood.

Misinterpretations of context clues (C7) led to the largest number of incorrect interpretations of the metaphors (T = 266). Most subjects gave from zero to six C7 responses ($\bar{X}_{C7}$ = 3.32, S.D. = 3.18). C7 responses made up about 3.54% of the total responses. Misinterpretations involving egocentric use of experience (C8's) were quite infrequent (T = 64) making up less than 1% of the total responses.

A relatively large number of misinterpretations were through the use of inappropriate commonplaces (C9's) (T = 254) with the majority of subjects giving from zero to six C9 responses ($\bar{X}_{C9}$ = 3.17, S.D. = 2.91).

There was a similar relatively low incidence of misinterpretations which involved mere repetition of the metaphorical statement in the form of a comparison (C10's) (T = 116) or a completely literal rendering of the metaphor (C11; T = 105). Each of these categories of responses contributed about 1.5% to the total responses made.

Overall, the most common misinterpretation was to use context clues incorrectly - C7's accounted for about one third of all misinterpretations. The next most frequent misinterpretation was the use of inappropriate commonplaces - C9's which also comprised about one third of the misinterpretations. The remaining one third of misinterpretations was made up of repetitions in the form of similes (C10), literal interpretations (C11) and egocentric misinterpretations (C8). Misinterpretations accounted for about 22% of all interpretive responses and about 11% of all responses.

TABLE 9

TOTAL MEANS, STANDARD DEVIATIONS AND T TESTS ON INTERPRETIVE VERBALIZATION DATA FOR GRADE SIX AND GRADE EIGHT SUBJECTS

	Grade	Totals	Means	S.D.	t.	P.
C1	6	542	13.55	3.92	2.07	0.04*
	8	621	15.52	4.58		
C2	6	4	0.10	0.30	0.67	0.50
	8	6	0.15	0.36		
C3	6	346	8.65	3.85	0.93	0.35
	8	310	7.75	4.76		
C4	6	17	0.42	0.78	0.74	0.46
	8	23	0.57	1.01		
C5	6	294	7.35	3.09	1.30	0.19
	8	333	8.32	3.60		
C6	6	113	2.82	3.30	6.45	0.000**
	8	358	8.95	4.90		
C7	6	170	4.25	3.48	2.69	0.008**
	8	96	2.40	2.58		
C8	6	33	0.82	1.71	0.15	0.88
	8	31	0.77	1.27		
C9	6	155	3.87	3.22	2.19	0.03*
	8	99	2.47	2.42		
C10	6	60	1.50	1.36	0.33	0.74
	8	56	1.40	1.35		
C11	6	69	1.72	1.55	2.54	0.01**
	8	36	0.90	1.34		
Total C	6	1802	45.52	6.73	2.05	0.04*
	8	1969	49.07	8.60		
Weighted C Total	6	2376	59.40	13.83	6.10	0.00**
	8	3283	82.08	18.97		

* significant at $<$ .05 level.
**significant at $<$ .01 level.

Table 9 shows interpretive verbalization data for grade 6 and grade 8 separately. The direction of differences between grade 6 and grade 8 is as would be expected. The grade 8 sample made significantly more responses ($p = 0.04$) than the grade 6. Grade 8 children made about four more Interpretive responses on the average than grade 6 and significantly more responses giving a more sophisticated interpretation. This is reflected in the highly significant difference ($p = 0.00$) between the mean weighted Interpretive scores of the two grade levels. The mean weighted score for grade 8 was 82.08 and for grade 6 was 59.40. The difference in weighted scores is much larger than the difference in total number of responses suggesting that there is a greater difference in quality of Interpretive statements than simple verbal output of Interpretive statements.

The higher level of interpretation for grade 8 children can be seen in the difference between particular category scores. Grade 8 made more ($\bar{X}_{C1\text{-grade } 8} = 15.52$) logical interpretations through context (C1) than grade 6 ($\bar{X}_{C1\text{-grade } 6} = 13.55$). Thus, there was no significant difference in the number of responses to category C3 - where the subject gave an interpretation which was logically possible but not particularly apposite. Similarly, no significant differences were found between the grades in categories C4 (logically correct use of experience to make a correct inference) and C5 (correct but somewhat pedestrian interpretation of the metaphor). However, in category C6, which required a sophisticated interpretation of metaphor, there was a highly significant difference between grade 6 and grade 8 ($p = 0.00$) with grade 8 children producing more C6's ($\bar{X}_{C6\text{-grade } 8} =$ 8.95; $\bar{X}_{C6\text{-grade } 6} = 2.82$).

Category C7, misinterpretation of passage caused by incorrect use of context clues, showed a significant difference between grade 6 and grade 8. Grade 6 subjects gave significantly more responses ($\bar{X}_{C7\text{-grade }6} = 4.25$;) than grade 8 subjects ($\bar{X}_{C7\text{-grade }8} = 2.40$; $p = 0.008$). No significant differences between the grades were found for category C8, misinterpretation based on egocentric thinking. Category C9, misinterpretation of the metaphor based on inappropriate commonplaces, showed a significant difference ($p = 0.03$), grade 6 subjects having on the average 3.87 responses in this category, while grade 8 had a mean of 2.47 C9 responses. Significantly more grade 6 subjects interpreted the metaphor in a strictly literal fashion than grade 8 students as is shown in category C11 ($p = 0.01$).

Thus, the distribution of Interpretive responses showed that the most common interpretations were through the logical use of contextual clues (C1 and C3). Very few responses directly mentioned experience (C2 and C4). Most interpretations of metaphor were on an obvious level (C5) while sophisticated interpretations were less frequent. Overall there were more correct than incorrect interpretations made. Context clue misinterpretations made up the largest number of incorrect responses (C7) and incorrect associations for the metaphor (C9) also led to many errors. It was quite uncommon for subjects to misinterpret metaphors through egocentric use of experience, repetition of the comparison or literal explanation of the metaphor (C8, C10, C11).

Grade 8 subjects were found to make more Interpretive responses than grade 6 subjects and their responses were of higher quality. This was reflected in their more frequent, accurate use of context clues (C1), their larger mean for superior interpretations of metaphor (C6), their less frequent misinterpretation through context (C7), inappropriate associations (C9) and literal explanation (C11).

Table 10 shows Elaborative verbalization data for the total sample. These Elaborative responses comprise 39% of the total responses. The most frequent appropriate Elaborative response was the use of concrete details or factual information about the passage (D5). There were 1110 D5 responses accounting for 15% of the total responses. Most subjects made between 9 and 19 D5 responses. All other appropriate elaborations were considerably lower in frequency than D5. The next most common correct elaboration was the use of evaluative language to describe the scene (D1), but there were only 206 D1's, most subjects making from 0 to 6 such responses. There were less than 100 affective responses (D2), summary or generalization responses (D3) and illustrations from personal experience (D4).

The second most frequent elaboration was an inappropriate one - D10, the use of concrete details or factual information which are not entirely apposite for the passage. These responses, which made up 12% of all responses (T_{D10}=902), are not considered entirely incorrect but rather somewhat outside the author's intent. The majority of the sample made 5 to 18 D10 responses. It seems that elaborations, both correct and incorrect, which involve some concrete imagery about the scene, were extremely likely to occur. The next most frequent inappropriate elaboration was the use of totally irrelevant facts or concrete details (D11). There were 281 such responses. Other inappropriate elaborations, inappropriate use of affect (D7), irrelevant generalizations (D8), illustrations from experience (D9), all occurred at a frequency less than 53.

TABLE 10

TOTAL RESPONSES, MEANS AND STANDARD DEVIATION FOR ELABORATIVE VERBALIZATION RESPONSES

(CATEGORY D)

Category	Total	Percentage of Total Responses	Mean	S.D.
D1	206	2.7	2.57	3.35
D2	65	0.8	0.81	1.23
D3	88	1.0	1.10	1.27
D4	40	0.5	0.45	0.78
D5	1110	15.0	13.87	4.96
D6	48	0.6	1.31	2.40
D7	52	0.7	1.25	1.61
D8	11	0.1	0.28	0.28
D9	46	0.6	0.57	1.29
D10	902	12.0	11.27	6.41
D11	281	3.0	3.51	3.09
Total D	2908	39.0	36.35	

Overall the children were inclined towards elaborations of a concrete nature. These were most commonly appropriate but many were out of keeping with the author's intent and a small amount were entirely irrevelant. Evaluative elaborations were next in frequency and only insignificant amounts of affective, summary, illustrative Elaborative responses occurred.

Table 11 shows the elaborative verbalization data for Grade 6 and 8 separately. The differences between the two grade levels are that Grade 8 children made more sophisticated Elaborative responses than Grade 6 children although they made about the same total number of Elaborative responses. The mean weighted D score for Grade 6 was 46.35 and for Grade 8, 55.15 a difference which was significant (p=0.004).

The greater degree of sophistication in Grade 8 responses can be seen in their greater number of evaluative descriptions of the scene portrayed in the passage (D1). Grade 6 children made a mean of 1.07 D1 responses and Grade 8 children 4.07, the difference being highly significant (p=0.0001). Grade 8 children also used many more summary or generalization statements. The Grade 8 mean for D4 responses was $(\bar{X}_{D3\text{-grade }8}=1.47)$ (p=.008) significantly higher than the Grade 6 mean $(\bar{X}_{D3\text{-grade }6}= 0.72)$. The use of relevant examples from personal experience (D4) although low in both grades, was significantly (p=0.02) greater in Grade 8 $(\bar{X}_{D4\text{-grade }8}=0.65)$ than in Grade 6 $(\bar{X}_{D4\text{-grade }6}=0.25)$.

Inappropriate elaborations were also more common in two categories (D9 and D11) for Grade 6 children than for Grade 8 children. The Grade 6 sample gave significantly more responses (p=0.009) for responses which were categorized as inappropriate or irrelevant examples from personal experience (D9), $(\bar{X}_{D9\text{-grade }6}= 0.95; \bar{X}_{D9\text{-grade }8}=0.20)$.

Similarly, the Grade 6 sample gave significantly more (p=0.0005) responses which were judged to be irrelevant facts or concrete details $(\bar{X}_{D11\text{-grade }6}=4.70; \bar{X}_{D11\text{-grade }8}=2.32)$.

In short, the Grade 6 subjects made more responses that were

TABLE 11

TOTALS, MEANS, STANDARD DEVIATIONS AND t-TESTS FOR GRADE SIX AND GRADE EIGHT ELABORATIVE VERBALIZATION RESPONSES

		Total	Mean	S.D.	t	P.
D1	6	43	1.07	1.38	4.42	0.0001**
	8	163	4.07	4.06		
D2	6	31	0.77	1.19	0.26	0.78
	8	34	0.85	1.31		
D3	6	29	0.72	0.88	2.72	0.008**
	8	59	1.47	1.50		
D4	6	10	0.25	0.63	2.31	0.02*
	8	30	0.65	0.82		
D5	6	522	13.05	4.68	1.49	0.14
	8	588	14.70	5.21		
D6	6	13	0.33	0.66	2.14	0.02*
	8	35	0.87	1.56		
D7	6	27	0.67	1.21	1.85	0.08
	8	25	0.62	1.48		
D8	6	4	0.10	0.44	0.18	0.86
	8	7	0.18	0.45		
D9	6	38	0.95	1.65	2.67	0.009**
	8	8	0.20	0.65		
D10	6	489	12.22	5.18	1.40	0.16
	8	413	10.32	6.86		
D11	6	188	4.70	3.27	3.67	0.0005**
	8	93	2.32	2.46		
Total D						
	6	1432	35.80	6.95	0.65	0.51
	8	1476	36.90	8.06		
Weighted D Total						
	6		46.35	12.39	2.90	0.004**
	8		55.15	14.65		

*significant at $<$ 0.05 level
** significant at $<$ 0.01 level

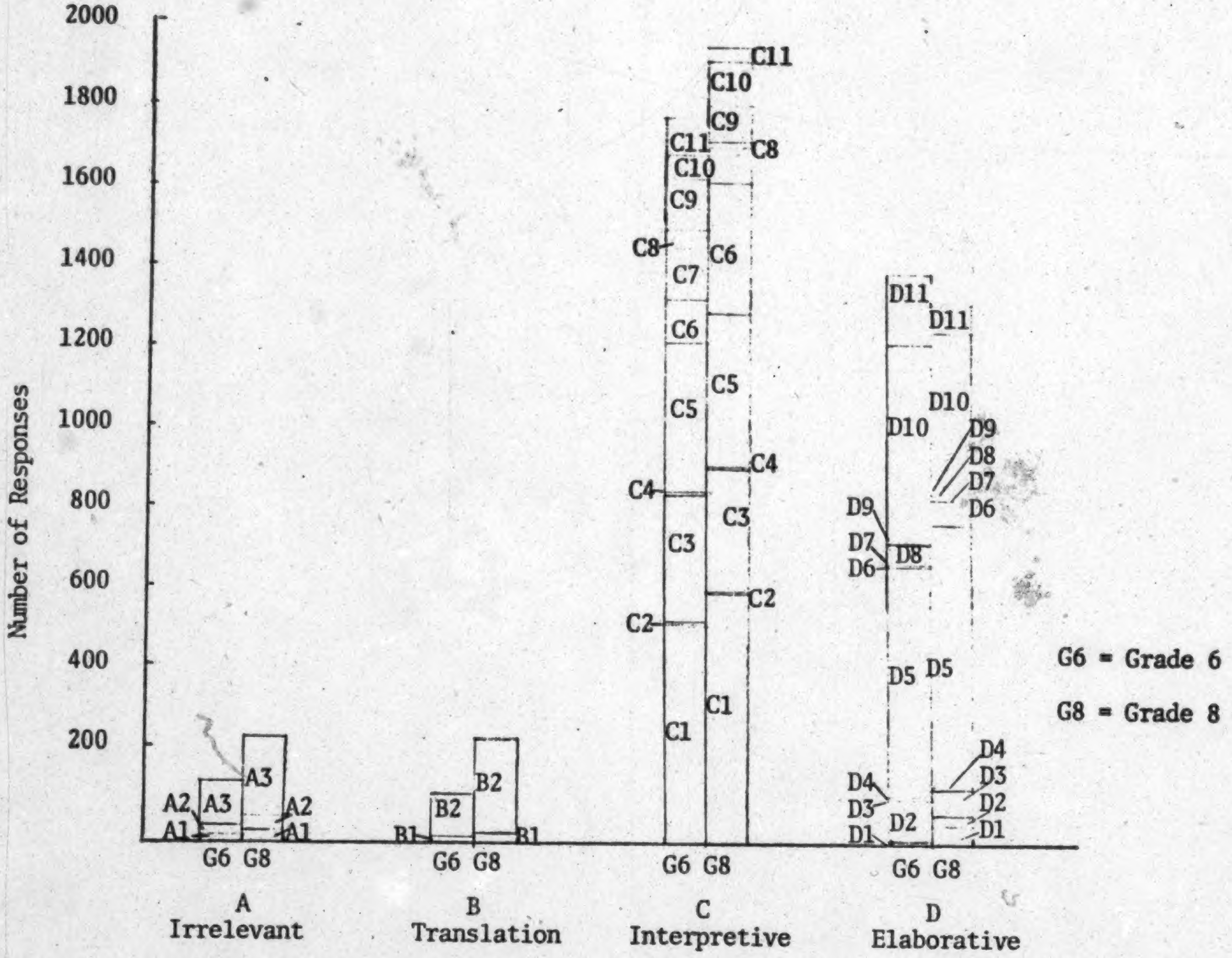

Figure 4 - Verbal Retrospective Data

Elaborative responses than Grade 8. Hence there is no greater tendency for Grade 8 to have a greater verbal output than Grade 6.

It is evident that differences between the grades lie in certain specific categories, with Grade 8 tending to choose more highly weighted and less lowly weighted categories than Grade 6. For example C6, a crucial category relating to sophisticated interpretation of metaphor, was a good deal more frequent for Grade 8 children than for Grade 6 children.

Figure 4 also illustrates the distribution of sub-category scores among the Grade 6 and Grade 8 samples. In general, the same sub-categories retain their position in relative frequencies of responses, for both Grade 6 and ~~Grade 8~~. For example, among Irrelevant responses, category A3 (repetitions) was the most frequent response for both Grade 6 and Grade 8 with A2 and A1 being quite low for both grades. Similarly B2 was much more common than B1 for both grades. The Interpretive responses (category C) show a much greater dispersion between categories - most categories (except C2 and C8) have a significant contribution to the total. Correct Interpretive responses were much more common than incorrect Interpretive responses. In contrast, the majority of Elaborative responses (category D) occurred in two categories D5 and D10 with the other categories contributing only small amounts to the total. An even larger contribution than for C responses among Elaborative responses. There were a greater variety of different kinds of Interpretive responses made then than there were Elaborative responses. Neither Grade 6 nor Grade 8 children were very likely to make any other Elaborative responses than an imagery type response. The evaluative response (D5) was the only other type making any important contribution to the total. Generalizations, illustrations and affective responses were very meagre.

III CORRELATIONS

Correlations between Look at Literature test and Associated Commonplaces test

TABLE 12

CORRELATIONS BETWEEN THE ASSOCIATED COMMONPLACES AND N.C.T.E. LOOK AT LITERATURE TEST SCORES

	Associated Commonplaces				
	I	II	III	IV	Weighted Total
N.C.T.E.	-.27*	-.25*	-.20	.34**	.30**

* significant at <0.05 level
** significant at <0.01 level

Table 12 shows the correlation between scores on the *Look at Literature* test and the *Associated Commonplaces Test*. There are significant negative correlations between category 1 of the *Associated Commonplaces Test* and the Look at Literature scores ($r=0.25$, $p.<0.05$). There is a highly positive relationship ($r=0.34$, $p.<0.01$) between level 4 of the *Associated Commonplaces* responses and the *Look at Literature* test and between overall weighted scores and the *Look at Literature* test ($r=0.30$, p. 0.01). It seems therefore that the subject with good critical reading and appreciation skills tends to understand metaphor at relatively mature levels.

TABLE 13

CORRELATION BETWEEN IRRELEVANT VERBALIZATION (CATEGORY A) AND LOOK AT LITERATURE TEST SCORES

	Irrelevant Responses			
	A1	A2	A3	A Total
Look at Literature	.10	.18	.14	.20

Table 13 shows the correlation between the Irrelevant category A responses (don't know tentativeness and repetition) and the Look at Literature test. No significant correlations were found. There does not seem to be much evidence that Irrelevant (category A) responses are related to high level literature reading skills. Both high and low scorers made about the same number of Irrelevant responses.

A significant positive correlation is found between the total number of Translation (B) responses and the Look at Literature test as shown in Table 14 (r=.22, p= 0.05). Thus, it would seem that the higher a child scored on the Look at Literature test, the more category B type responses he gave. Hence, children with higher level reading skills appear to extract more information directly from the passages.

TABLE 14

CORRELATIONS BETWEEN TRANSLATION RESPONSES (CATEGORY B) AND LOOK AT LITERATURE TEST SCORES

	B1	B2	B Total
Look at Literature	.19	.20	.22*

*significant at $< .05$
** significant at $< .01$

Table 15 shows the relation between Interpretive category C responses and the Look at Literature test. A significant relationship ($r=.22$, $p=0.05$) was found between the ability to make logically correct inferences using context clues (C1) and the scores on the Look at Literature test. That is, subjects who scored higher on the Look at Literature test were also able to make correct logical inferences. A highly significant relationship ($r=0.50$, $p<0.01$) was found between sophisticated responses to metaphor and the scores on the Look at Literature test (C6). Hence, the ability to interpret metaphor on a higher level and critical reading skills as measured by the Look at Literature test , are related. A highly significant negative correlation ($r=-.42$, $p<0.01$) was found between misinterpretations due to misuse of context clues (C7) and the Look at Literature test. Similarly, there was a highly significant negative correlation ($r=-.39$ $p<0.01$) between misinterpretation of metaphor through the selection of inappropriate commonplaces (C9) and the Look at Literature test.

TABLE 15

CORRELATIONS BETWEEN INTERPRETIVE VERBALIZATIONS AND LOOK AT LITERATURE TEST SCORES

	Look at Literature
C1	.22*
C2	.01
C3	-.06
C4	-.07
C5	.14
C6	.50**
C7	-.42**
C8	-.08
C9	-.39**
C10	-.05
C11	-.30**
Weighted overall C	.53**

*significant at <0.05 level
** significant at <0.01 level

Responses classified as misinterpretations of metaphors because of the subject taking the figurative expression literally (C11), showed a significant negative correlation ($r=0.30$, $p<0.01$) with Look at Literature test scores. Misinterpretation responses were therefore more common amongst children who did poorly on the Look at Literature test. There was a significant positive correlation ($r=0.53$, $p<0.01$) between overall weighted scores, for Interpretive responses and the Look at Literature test. It would seem that subjects who scored highly on the Look at Literature tests were better interpreters of metaphor than those who scored lower.

TABLE 16

CORRELATIONS BETWEEN ELABORATIVE VERBALIZATIONS AND LOOK AT LITERATURE TEST SCORES

	Look at Literature
D1	.38**
D2	.07
D3	.18
D4	.05
D5	.28*
D6	-.01
D7	-.05
D8	0.13
D9	-.33**
D10	-.16
D11	-.51**
Weighted Overall D	.32**

*significant at < 0.05 level
** significant at < 0.01 level

Table 16 shows the correlation data for Elaborative responses (category D) and Look at Literature results. There was a highly significant positive relationship ($r=0.38$, $p<0.01$) between the use of evaluative language (D1) and the Look at Literature test. Thus, the higher a subject scored on the Look at Literature test, the better able he was to make appropriate judgmental statements about the passage. A significant positive relationship ($r=0.28$, $p=0.05$) was found between the subject's ability to supply additional concrete factual information (D5) and the Look at Literature test. Highly significant negative correlations ($r=0.33$, $p<0.01$) were found between irrelevant illustrations from personal experiences (D9), irrelevant facts or concrete details (D11) ($r=-0.51$, $p=0.01$) and the Look at Literature test. The weighted D total was found to be highly significantly correlated with the Look at Literature test ($r=.32$, $p=0.01$).

The correlation data seem to suggest good agreement between the Look at Literature test as a measure of critical reading and the two measures of metaphorical understanding employed in this study. On the Associated Commonplaces Test a greater number of inferior level responses was associated with low Look at Literature scores while more higher level Associated Commonplaces responses were associated with higher Look at Literature scores. For the verbalizations, there was a positive relationship between Look at Literature scores and Translation responses, correct Interpretive responses and appropriate Elaborative responses, and negative correlations with misinterpretations and inappropriate elaborations. The highest correlation occurred between Look at Literature scores and Interpretive responses, and particularly with the most sophisticated understanding of metaphors. Significant correlations of Look at Literature scores with Elaborative responses occurred in fewer categories and the correlation with the overall Elaborative score was lower than with the overall Interpretive store. The data suggest that the Look at Literature test and verbalization data overlap to some degree in measuring mature understanding of figurative language in literature.

TABLE 17

CORRELATIONS BETWEEN THE ASSOCIATED COMMONPLACES TEST AND IRRELEVANT RESPONSES

(CATEGORY A)

	A Verbalization			
	A1	A2	A3	A Total
Associated Commonplaces				
I	0.01	-0.06	0.14	-0.04
II	-0.04	-0.08	-0.03	-0.08
III	-0.01	-0.12	0.11	-0.09
IV	0.08	-0.19	-0.03	.08
W	-0.14	.18	-0.03	.03

Correlations between Associated Commonplaces Test and Verbalization data

Irrelevant Responses. Table 17 shows the correlations between the categories for the associated commonplace data and the Irrelevant responses (category A) of verbal retrospective data. No significant correlations were found.

TABLE 18

CORRELATIONS BETWEEN THE ASSOCIATED COMMONPLACE TEST AND
CATEGORY B VERBALIZATION DATA

		B Verbalization		
		B1	B2	B Total
Associated Commonplace	I	-0.11	-0.26*	-0.26*
	II	-0.09	-0.19	-0.19
	III	-0.04	-0.17	-0.16
	IV	0.04	0.24*	0.21
	W	-0.03	0.24*	0.21

* significant at < 0.05 level
** significant at < 0.01 level

Translation Responses. Table 18 shows the correlation data between the Associated Commonplaces Test and Translation responses (category B). A significant negative correlation (r=0.26, p 0.05) was found between Associated Commonplaces category 1 (failure to understand the literal meaning of a word) and category B2 (slight re-wording of information). Similarly, a negative correlation (r=0.26, p 0.05) was found between total B responses and Associated Commonplaces category 1. That is, subjects who made more low level, category 1 responses on the Associated Commonplaces, made fewer Translation responses (B2 and Total B). A significant positive correlation (r=0.24, p 0.01) was found between Associated Commonplaces category 4 (mature understanding of the metaphor as shown by the subject's ability to choose appropriate commonplaces and justify his choice) and category B2 (slight re-wording of information in passage). These correlations indicate that low level category responses on the Associated Commonplaces Test were associated with a greater number of Translation responses.

Interpretive Responses. Significant correlations (see table 19) were found between sophisticated responses to metaphor (C6) and mature understanding of the metaphor as measured by category 4 of the Associated Commonplaces Test ($r=0.39$, $p<0.01$) and between the sophisticated mature interpretation of metaphor (C6) and the weighted total for the Associated Commonplaces Test ($r=0.40$, $p<0.01$). Similarly, there was a highly significant correlation between the weighted total for the Interpretive verbalizations and category 4 of the Associated Commonplaces Test ($r=0.44$, $p<0.01$). In other words, those children who made high level responses to the Associated Commonplaces Test also made significantly more Interpretive verbalization responses at a higher level.

Significant correlations were also found between correct logical use of context clues (C1) and mature understanding of the metaphor as measured by category 4 in the Associated Commonplaces Test ($r=.25$, $p<0.05$). Similarly, a significant relationship was found between the correct logical use of context (C1) and the weighted total to the Associated Commonplaces Test ($r=.28$, $p<0.05$). Again the more sophisticated associated commonplaces responses were found to be related to a higher level verbalization response. Another positive significant correlation was found between misinterpretation of the passage (C7) and failure to understand the figurative connotations of the metaphor

TABLE 19

CORRELATIONS BETWEEN THE ASSOCIATED COMMONPLACES TEST AND INTERPRETIVE VERBALIZATION

(CATEGORY C)

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	Weighted
1	0.14	0.04	-0.03	.15	.14	-.22	.20	0.01	.27*	-.03	.12	-.05
2	0.12	-0.16	-0.15	-.01	.06	-.17	.24*	-0.05	.30**	.08	.17	-.08
3	-0.05	-0.03	0.07	.03	.09	-.10	.13	.05	.00	.16	.03	-.04
4	0.25*	-0.05	-0.03	-.10	.05	.39**	-.27*	-.05	-.09	-.08	-.20	.41**
W	0.28*	0.05	-0.03	-.08	.05	.40**	-.27*	-.09	-.10	.01	-.20	.44**

*significant at < 0.05
** significant at < 0.01

as measured by category 2 of the Associated Commonplaces Test ($r=0.24$, $p<0.05$). In other words, those subjects who failed to understand the figurative meanings of a word as measured by the Associated Commonplaces Test also make significantly more misinterpretations of the passage.

A significant negative correlation was found to exist between category 4 of the Associated Commonplaces Test, and C7 of the verbalization data (misinterpretation of the metaphor using context clues incorrectly) ($r=0.27$, $p<0.05$). Such a relationship was also found between the weighted total for the Associated Commonplaces Test and C7 of the verbalization data ($r=0.27$, $p<0.01$). That is to say, children who made high-level responses to the Associated Commonplaces Test did not make many errors on the metaphorical passage due to incorrect use of context clues or failure to understand the metaphor.

Significant positive correlations were found between misinterpretations by using inappropriate commonplaces to the metaphor (C9) and Associated Commonplaces categories 1 and 2 ($r=0.27$, $p<0.05$; $r=0.30$, $p<0.01$). This is to be expected as these categories are assessing the effect of inappropriate associations on metaphorical understanding, although each in a different fashion.

SUMMARY

The relationship between the Associated Commonplaces Test and the Interpretive verbalization data is in agreement with what one would expect. There is a tendency for high level responses on the

Associated Commonplaces to occur concomitantly with more sophisticated verbalizations. In general, the choice of inappropriate commonplaces (category 1 and 2) on the Associated Commonplaces was associated with more misinterpretations (C7 and C9). The choice and linking of appropriate commonplaces (category 4) on the Associated Commonplaces was positively related to logical and mature verbal interpretation of metaphor (C1 and C6's)

Elaborative Responses Table 20 shows that a highly significant relationship was found between the D1 response (evaluative language to describe the scene) and category 4 of the Associated Commonplaces Test ($r=0.33$, $p<0.01$), and also between the D1 responses and the weighted total of the Associated Commonplaces Test ($r=0.33$, $p<0.01$). This means that those subjects making high level responses to the Associated Commonplaces Test also made more D1 responses.

Similarly, category D3 generalization statements showed a high positive correlation with Associated Commonplaces category 4 ($r=0.35$, $p<0.01$) and also with the weighted total of the Associated Commonplaces Test ($r=0.35$, $p<0.01$). Hence, subjects making more high level Associated Commonplaces responses made more elaborative generalizations.

A high positive correlation was found between Associated Commonplaces category 1 and D9 (incorrect elaborations), ($r=0.47$, $p<0.01$). In other words, children who made many category 1 Associated Commonplaces responses, also made significantly many more D9 responses. A significant negative correlation between Associated Commonplaces category 4 and D9

TABLE 20

CORRELATIONS BETWEEN ASSOCIATED COMMONPLACES AND ELABORATIVE VERBALIZATIONS

(CATEGORY D)

	ELABORATIVE VERBALIZATIONS											
AC	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	DW
I	-.13	-.19	-.18	-.09	-.11	0.02	-.10	-.14	.47**	.27*	.25*	-.02
II	-.03	-.16	-.08	-.17	-.14	.14	-.09	-.06	.08	.23*	.18	-.02
III	-.12	.11	-.10	.07	.04	.03	.07	-.05	.20	.09	.04	.08
IV	.33**	-.07	.35**	.08	.04	.13	.05	0.14	-.24*	.01	-.35**	.19
W	.33**	-.02	.35**	.12	.10	.17	.10	0.14	-.21	.05	-.42**	.29*
Over-all Weighted	.56**	.07	.52**	.33	.41**	.25	.10	.03	-.13	.07	-.52**	.73**

*significant at < 0.05
**significant at < 0.01

responses was found ($r=0.24$, $p<0.01$). Thus, subjects who made many *Associated Commonplaces* category 4 level responses made few category D9 responses.

Positive correlations were found between D10 responses (improbable details) and *Associated Commonplaces* category 1 and 2 ($r=0.27$, $p<0.05$; $r=0.23$, $p<0.05$). Similarly, positive significant correlations were found between D11 (incorrect details) and *Associated Commonplaces* category 1 ($r=0.25$, $p<0.05$). Highly significant negative correlations were found between categories D11 and *Associated Commonplaces* category 3 and *Associated Commonplaces* category 4 ($r=0.35$, $p<0.01$; $r=0.42$, $p<0.01$).

In brief, subjects who gave lower level responses to the *Associated Commonplaces Test* (category 1 and 2) also gave more incorrect or inferior Elaborative statements (D9, D10, D11) during the testing of the understanding of metaphor, while those subjects who gave sophisticated *Associated Commonplaces Test* responses (category 4) tended to give fewer inferior Elaborative statements (D9) in this part of the study and more appropriate elaborations (D1 and D3).

TABLE 21

CORRELATIONS BETWEEN THE ASSOCIATED COMMONPLACES TEST AND TOTAL WEIGHTED VERBALIZATION SCORE

	I	II	III	IV	W
Verbalization	-10	-.14	-.04	.39**	.44**

* significant at <0.05
**significant at <0.01

Table 21 shows the correlation between the overall verbalization scores and associated commonplace categories. There was a highly significant relation between category 4 and the weighted total ($r=0.39$, $p<0.01$). In other words, those subjects making a sophisticated response to the Associated Commonplaces Test also made higher quality verbalizations about the metaphorical passages.

It would appear that there is some overlap between what is being measured by the Associated Commonplaces Test and the retrospective verbalizations. The choice of appropriate commonplace with explanation (category 4) appears to be the most strongly associated with mature Translation, Interpretive and Elaborative verbalizations. The lack of significant correlations with unexplained choices of appropriate commonplaces (category 3) suggests the importance of having children be able to explain their responses on a test involving choice of responses.

Summary of Correlations

It was evident from the data that there was considerable agreement among the three measures of understanding. The Look at Literature scores, for instance, were found to be related positively to explanation and rationalization responses on the Associated Commonplaces Test and negatively to lower level choices. The verbalization data were also related to the Look at Literature test. Subjects who scored well on the Look at Literature test also made more Translation responses, more appropriate Interpretive responses and more appropriate Elaborative responses. The particular Interpretive responses which were positively related to the Look at Literature test were logically correct inference through context and most sophisticated interpretation of metaphor. Amongst

Elaborative responses, evaluative responses and concrete factual responses, correlated positively with Look at Literature scores. In fact, the ability to read for higher level critical meaning is related to the ability to explicate metaphor both on the test of metaphorical understanding and on free verbalizations about metaphorical passages.

Similarly, there is overlapping between what is being measured by the Associated Commonplaces Test and by the categorized verbalizations. It seems that subjects who chose more higher level associated commonplaces, also tended to make more appropriate Interpretive responses. Again, choices of logically correct inferences from context and most sophisticated interpretation of metaphor were related to number of rationalized choices on the Associated Commonplaces Test, while lower level Associated Commonplaces choices (1 and 2) were associated with more misinterpretations. Also, the best Elaborative responses were related to superior Associated Commonplaces choices.. Subjects who made more evaluative elaborations and subjects who made more generalizations, made more category 4 Associated Commonplaces choices. The lower level Associated Commonplaces choices were associated with more incorrect elaborations.

The results of this chapter seem to support the validity of both the Associated Commonplaces Test and the verbal retrospections as a procedure for examining children's interpretations of metaphor.

CHAPTER 7

THE METAPHORS

This chapter contains the results of the judges' ratings of the ten metaphors along the simple-complex, common-unusual, concrete-abstract, connotative-denotative dimensions suggested by the author (see p.65, ch.4). A discussion of the qualities of each metaphor based on the judges' ratings is presented. This chapter also presents the relative numbers of different category responses evoked by each metaphor on both the Associated Commonplaces Test and the Verbal Retrospective data. This chapter is organized so that there is first a general discussion of the dimensions of metaphor, Associated Commonplaces responses and Verbal Retrospective responses. Then each metaphor is

TABLE 22

JUDGES RATINGS OF METAPHOR ALONG 4 DIMENSIONS

Metaphors	Dimension 1		Dimension 2		Dimension 3		Dimension 4	
	Simple	Complex	Common	Unusual	Concrete	Abstract	Connot.	Denot.
1.	100%	0	80	20	100	0	0	90
2.	90	10	90	10	100	0	30	70
3.	30	70	40	60	50	50	40	60
4.	60	40	60	40	70	30	60	40
5.	20	80	0	100	60	40	70	30
6.	70	30	10	90	70	30	20	80
7.	0	100	10	90	0	100	80	20
8.	70	30	40	60	50	50	100	0
9.	90	10	20	80	100	0	0	100
10.	80	20	10	90	20	80	90	10

discussed separately, summarizing its qualities on the dimensions and the responses to it.

The Dimensions of Metaphor

Table 22 shows the ten judges' perceptions of the metaphors categorized along the four dimensions described in chapter 4. Figure 4 and figure 5 provide a schematic view of where the metaphors fall along these dimensions. The metaphors were plotted on figures 5 and 6 according to the percentage agreement by judges on their characteristics along the four dimensions. For example, metaphor 1 was rated by 100% of the judges as simple (0 on simple-complex scale on Figure 5) and by 80% of the judges as common (2 on common-unusual scale on Figure 5). Appendix F gives a more detailed explanation of how Figures 5 and 6 were constructed. The figures allow the reader to see at a glance whether a metaphor falls on the extremes of a dimension, and at which end of the dimension it is placed (according to the judges).

It can be seen that there was relatively good agreement among judges concerning the classification of most metaphors along the four dimension. Certain dimensions appear to lend themselves more readily to clear-cut judgements than others. For example, nine-tenths of the judgements on the simple-complex dimension, seven-tenths of the judgements on common-unusual and concrete-abstract dimensions, and six-tenths of the judgements on the connotative-denotative dimension indicated more than seventy per cent agreement. Considering the abstractness of the description of the dimensions, there is remarkably good agreement among judges about most of the metaphors.

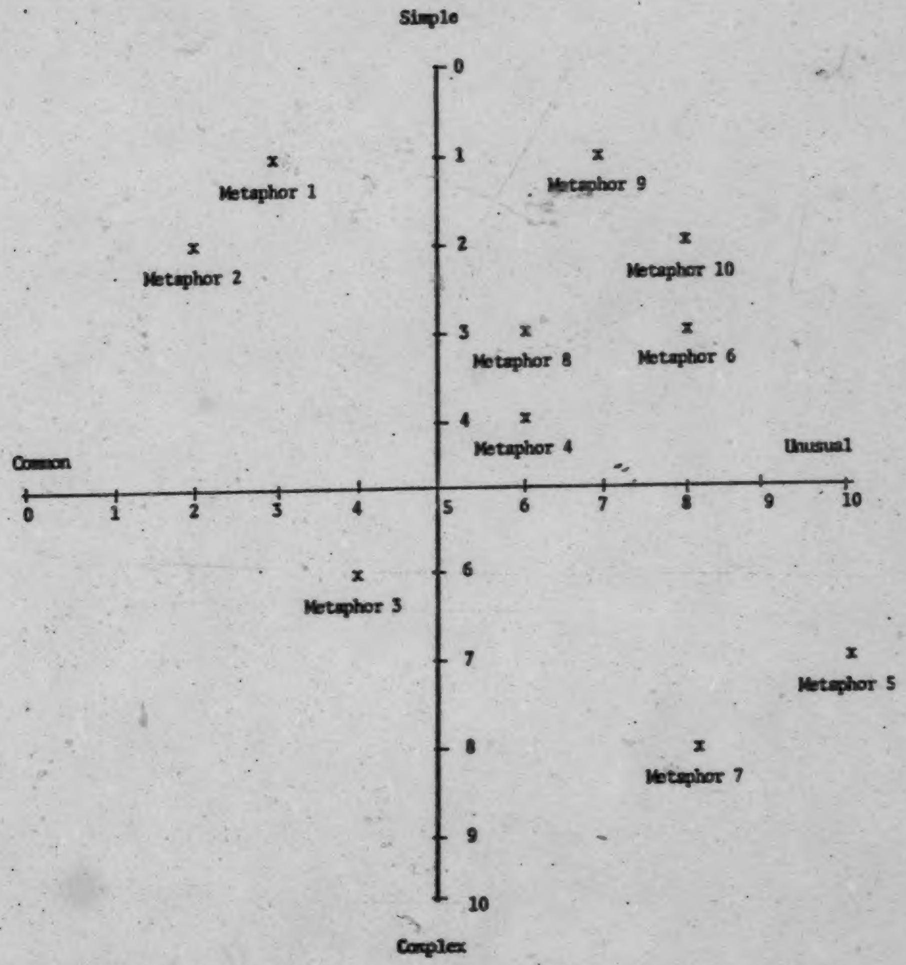

Figure 5 - The Simple-Complex And Common-unusual Dimensions.

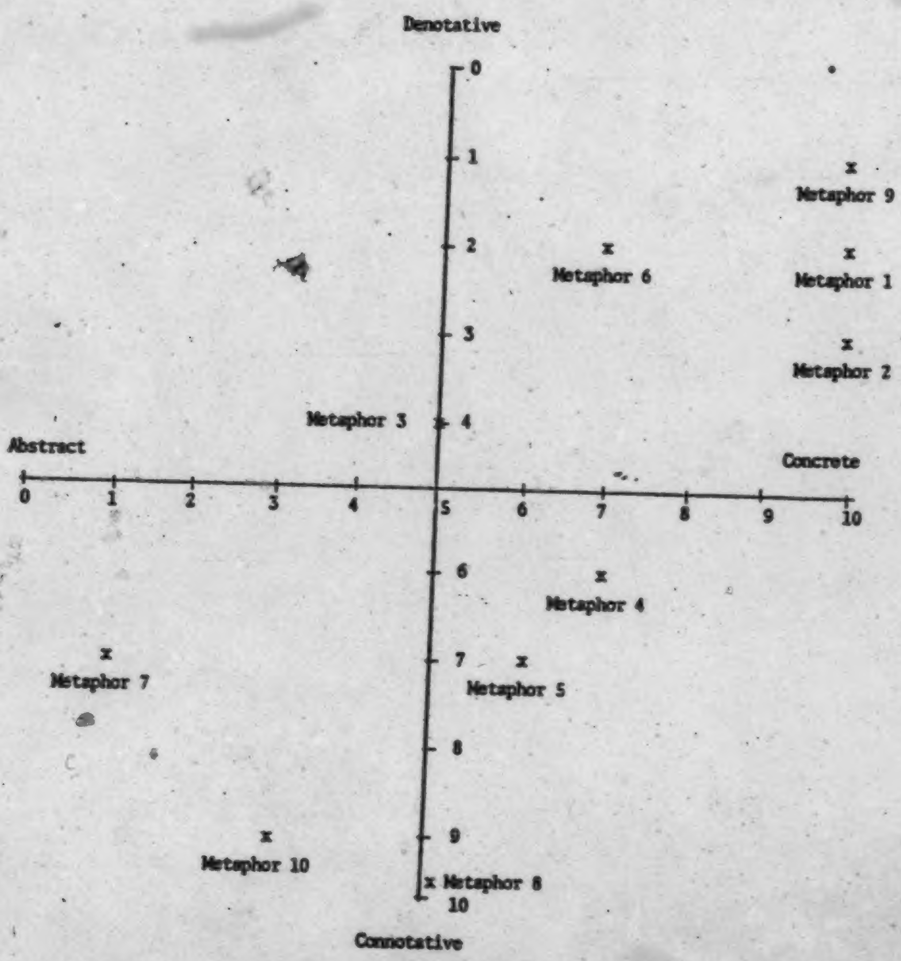

Figure 6 - The Denotative-Connotative and Abstract-Concrete Dimensions.

This would suggest that the metaphors were more readily distinguishable along the simple-complex dimension than on the other three dimensions, particularly the connotative-denotative dimension. The lack of agreement and the occasional complete split in the views of judges may be due to some extent to the failure to define some of the dimensions in operational terms sufficiently clearly. For example, to operationalize the terms "denotative" and "connotative" is very difficult since one is hard put to draw the line between the dictionary meaning of words and their affective non-criterial associations. Some differences in judges' classifications of something as complex as figurative language would also be expected, due to individual background differences such as in the quantity and nature of books read by judges. All these factors add to the difficulty of obtaining consensus on the qualities of metaphors.

The author would argue, further, that many metaphors cannot be clearly placed at either end of a continuum since they have qualities of both extremes. Hence one judge may perceive a particular quality of a metaphor and place it on one pole of the continuum and another judge may perceive a contrary characteristic, yet both characteristics may be present. The discussion of individual metaphors suggests possible reasons for divergent classifications.

Responses to Metaphor

This section is an examination of the relative number of responses evoked by different metaphors. Tables 23, 24, 25, and 26 show the numbers of associated commonplaces and verbal retrospective responses elicited by each metaphor. Since no statistical tests have been performed on the data it is impossible to determine whether differences are statistically significant. Subjective judgements about the importance of differences are made by the author.

TABLE 23

RESPONSES TO METAPHOR ON THE ASSOCIATED COMMONPLACES TEST

Metaphors	I	II	III	IV	Total
1.	11	13	29	154	207
2.	4	14	28	172	218
3.	6	8	62	166	242
4.	4	9	55	165	233
5.	7	52	37	99	195
6.	6	64	44	112	187
7.	4	49	111	30	194
8.	1	12	65	89	167
9.	4	29	50	112	235
10.	2	32	51	142	227
Mean	6.9	28.2	53.2	114.1	210.5

Associated Commonplaces

Table 23 shows that category 1 responses were evoked only very infrequently by the metaphors. These responses are the choice of words which are unrelated to the metaphor. The number of category 1 responses varied from one for metaphor 8 to eleven for metaphor 1. The mean number of category 1 responses was 4.9 so most metaphors are associated with less than 10 of these inferior responses and there are no striking differences between metaphors. Category 2 responses were somewhat more common (mean=28.2) and variable (range 9 to 52). Category 3 responses (selection of an appropriate commonplace but without being able to give an adequate reason for its selection) were more frequent again (mean=53.2) and varied from 28 to 111 though most were between 28 and 70. By far the most common response evoked by the metaphors was the category 4 response (selection of an appropriate commonplace and being able to justify its choice). The metaphors produced a mean of 114 category 4 responses. Most metaphors produced between 90 and 180 category 4 responses. The exception was metaphor 7 which only produced 30 category 4 responses.

Hence, it appears that there was a uniformly low incidence of category 1 responses among metaphors and a slightly higher and more variable incidence of level 2 responses. Category 3 was the next most common response and category 4 the most common. Metaphor 7 was the only metaphor which differed markedly from the others on category 3 and 4 responses. For most metaphors, the appropriate commonplace was chosen and explained.

Verbal Retrospective Data

Table 24 shows the verbal retrospective responses which were classified as Irrelevant (A) responses and Translation (B) responses. Both A1 and A2 responses occurred very infrequently (mean = 4.6 for A1 and 4.8 for A2). Most of the metaphors produced less than 10 of these responses. Metaphor 7 produced the largest number of A1 (15) and A2 (10) responses but this is still a very small number considering that they come from a sample of 80. Metaphor 5 produced 12 A1 responses which is the second highest number of A1's. Therefore the metaphors did not lead to many responses of a hesitant nature (A2) or responses indicating complete inability to understand (A1). A3's (repetition) were the commonest irrelevant response (mean = 36.5) and there was a remarkable similarity between metaphors in the number of these repetitions produced (from 21 to 36). It seems that all metaphors had a similar tendency to produce repetitions. Overall, the total Irrelevant responses for each metaphor were also similar among metaphors (from 28 to 54).

TABLE 24

IRRELEVANT AND TRANSLATION RESPONSES TO METAPHORS

Metphors	A1	A2	A3	Total A	B1	B2	Total B
1.	2	4	21	28	3	16	19
2.	2	4	28	34	7	34	41
3.	4	4	30	38	2	68	70
4.	1	5	36	42	6	56	62
5.	12	7	23	42	1	17	18
6.	0	1	33	34	4	9	13
7.	15	10	29	54	4	9	13
8.	6	7	23	36	2	16	18
9.	3	2	24	29	2	9	11
10.	1	2	25	28	3	42	45
Means	4.6	4.8	36.5	37.3	3.4	27.6	31.0

Translation responses were also surprisingly infrequent, particularly B1's which are statements from the passage without rewording the information. The mean number of B1's was only 3.4 and all metaphors produced less than 10 of these responses. B2's (re-wording of facts from passage), were more frequent (mean = 27.6) and variable (range 9 to 68). Six metaphors elicited less than 20 of these responses while the other four elicited more than 34.

Hence, the most common Irrelevant responses were repetitions (A3's) but most metaphors produced about the same number of these responses. Most Translation responses made involved re-wording of information (B2). Only very insignificant numbers of restatements without re-wording (B1's) occurred. There was quite a range in number of B2's produced by the ten metaphors (from 9 to 68). Some metaphors seemed to lend themselves much more readily than others to the search for information from the immediate context.

Metaphor 3 and metaphor 4 led to a great many B2's compared to metaphor 6, 7 and 9. There seems to be some relationship between the comprehensibility of the passage in which the metaphor is embedded and the number of translation responses. The more obscure the context, the less likely were the subjects to rephrase this information into translation responses.

Table 25 shows the Interpretive responses to the metaphors. There are negligible numbers of C2, C4, C8, C10 and C11's, most metaphors producing less than 10 of these responses. The superior interpretation of the context (C1) was frequent for all metaphors, the number of C1's varying from 77 to 168 (mean = 106.6) among the metaphors. The logically possible interpretation of context (C3) was less common, ranging from 20 C3's to 106 C3's with a mean of 60.6. C5's and C6's are correct and superior correct interpretations of metaphor. The number of C5's varied from 18 to 81 among the ten metaphors with a

TABLE 25

INTERPRETIVE RESPONSES TO METAPHORS

	C1	C2	C3	C4	C5	C6	Total Correct	C7	C8	C9	C10	C11	Total Incorrect	Total
1.	168	0	64	2	80	18	312	15	4	25	31	5	80	392
2.	113	1	37	1	68	50	270	11	0	5	10	20	26	296
3.	93	8	20	4	41	70	236	7	2	20	9	6	44	280
4.	83	0	34	1	68	47	233	17	3	13	4	5	42	275
5.	127	1	53	1	25	39	247	33	6	59	3	6	107	354
6.	133	1	87	9	77	27	334	22	2	47	10	10	48	382
7.	77	0	70	1	18	26	192	86	5	50	2	5	148	340
8.	81	0	106	2	28	31	246	19	6	19	22	29	96	342
9.	102	1	73	6	57	18	257	18	24	31	9	9	104	361
10.	89	0	62	5	81	45	282	8	6	9	0	1	24	306
Means	106.6	1.2	60.6	3.2	54.3	37.1	260.9	23.6	5.8	23.5	10.0	9.6	71.9	332.8

mean of 54.3, while the number of C6's varied from 18 to 70 with a mean of 37.1. The variability in the number of C5's was less than for C6's - the range was very similar for these two types of responses but there were fewer C6's.

There were similar numbers of C7's (misinterpretations of context) and C9's (misinterpretations of metaphor) with means of 23.6 and 23.5 respectively. There was a large range of 7 to 86 for context misinterpretations to metaphor 7 which was an unusually large number. The variability among the rest of the metaphors was low - all others had 33 or less C7's and most elicited less than 20. Metaphors 5 and 7 produced large numbers of C9's (59 and 50) but again the majority of metaphors elicited less than 20.

The metaphorical passages then, commonly evoked a large number of correct interpretations of context, and a smaller number of logically possible interpretations of context. Responses which were correct interpretations of metaphor were the next most frequent and superior interpretations of metaphor were less frequent again. Misinterpretations of context and metaphors were about equally uncommon. A negligible number of interpretations (correct or incorrect) obviously utilized experience. Similarly, few metaphors evoked literal interpretations or simple statements of a comparison.

Table 26 shows the Elaborative responses to the metaphors. The mean number of responses was less than 10 for the following categories: D2 (feelings), D3 (generalizations), D4 (illustrations), D6 (incorrect evaluations), D7 (inappropriate feelings), D8 (incorrect generalizations). Evaluative statements (D1) occurred in response to metaphors at an average frequency of 16.5 with a range from 9 to 27. Most

TABLE 26

ELABORATIVE RESPONSES TO METAPHORS

Metaphors	D1	D2	D3	D4	D5	(D1-D5) Total Correct	D6	D7	D8	D9	D10	D11	Total Incorrect	Total D
1.	24	6	4	1	138	173	3	4	1	0	67	11	86	259
2.	9	22	6	1	112	150	5	13	3	8	76	5	110	260
3.	19	9	10	1	117	156	5	5	5	2	64	27	108	264
4.	27	4	15	2	73	121	8	6	7	4	94	14	133	254
5.	10	5	2	2	120	139	12	6	10	5	92	36	161	300
6.	8	0	4	1	103	116	9	11	9	0	104	30	163	279
7.	19	0	5	2	82	109	5	15	5	36	62	59	149	258
8.	16	3	9	0	77	105	11	15	1	3	101	18	149	254
9.	13	3	3	2	72	93	10	10	5	7	81	41	154	247
10.	20	5	4	4	103	136	4	13	1	6	82	14	120	256
Means	16.5	5.7	6.2	1.6	99.7	129.8	7.2	9.8	4.7	3.8	82.3	25.5	133.3	263.1

metaphors produced more than 10 evaluative statements. By far the most common correct Elaborative statement was the D5 (mean = 99.7) which is the supplying of concrete details to describe the scene. The smallest number of correct concrete details for a metaphor was 72 and the largest was 138. There was a correspondingly large number of logically possible concrete details (D10). The mean number of D10's produced by metaphors was 82.3, ranging from 67 to 104. Incorrect concrete details (D11's) were also fairly common with a mean of 25.5 and a wide range from 5 to 59. Overall, there was not a very wide variability in the number of correct or incorrect elaborations evoked by metaphors. The range was from 93 to 173 but most metaphors produced between 120 and 150 correct elaborations (mean = 129.8). The number of inferior elaborations ranged from 86 to 161, the majority of metaphors evoking from 110 to 150. In short, metaphors produced very few elaborations, correct or incorrect, about feelings, generalizations, or illustrations. The evaluative statements were slightly more frequent but the vast majority of elaborations on the metaphorical passages dealt with the physical details of the scene described. Most of these details were correct, an intermediate number possible but not particularly appropriate, and the smallest number totally inappropriate.

The present section has examined the associated commonplaces and verbal retrospective responses produced to the ten metaphors. In general there were fairly similar patterns of responses produced for all metaphors. Configurations of category scores had more in common with each other among metaphors than one would expect when the widely different aspects of experience described in the ten metaphors is considered. In the Associated Commonplaces test, the majority of the metaphors enabled the children to select an association appropriate to both frame and focus, and they were able to explain the association. Only in the case of metaphor 7, a particularly difficult metaphor, was this generalization untrue on the whole.

Among the verbal retrospections, Irrelevant responses seemed insignificant. Even the most difficult metaphors produced very few "don't know" responses. Redundancy occurred at about similar levels for all metaphors. Translation responses varied considerably more among metaphors with a large number of ranslation responses being associated with metaphorical passages containing a good many context clues as to the meaning of the metaphor itself.

The metaphors evoked considerably more correct interpretations than incorrect interpretations. Even the most difficult metaphor produced slightly more correct than incorrect responses. For the majority of metaphors there was a much greater differential between correct and incorrect responses than there was for metaphor 7. Interpretations relied largely on context but there were a lesser but good number of interpretations leading directly from the associations of the metaphor itself.

Elaborations were less common than interpretations and were much more likely to be incorrect. The overwhelming majority of metaphors evoked elaborations dealing with the physical, perceptual imagery aspects of the metaphorical experience. The next most common elaborations, the evaluative elaborations, occurred at about a sixth the frequency. Elaborations involving feelings, generalizations and illustrations were almost non-existent.

In general, the frequency counts made in this chapter indicate that there is far more similarity between the way in which subjects respond to metaphors than there are differences.

THE INDIVIDUAL METAPHORS

Metaphor 1

> The wave struck the cliff. It sent long tongues streaming around me so that I could neither see nor hear. The tongues of water licked into all the crevices, dragged at my hand and at my bare feet gripping the ledge.

Judges' Ratings

Table 22 shows that there was 100% agreement that the metaphor is simple on the simple-complex dimension. There was 90% agreement that the metaphor was concrete on the concrete-abstract dimension and 80% agreement that the metaphor was common on the common-unusual dimension. There is clearly little difficulty in obtaining good agreement on the qualities of this metaphor. It has a relatively common set of concrete associations and can be explained quite easily. The associations for the metaphor are mainly those attached to the lexical meaning of the word and do not carry very many affective qualities.

Figures 7, 8, 9 and 10 show schematically the relative numbers of higher and lower level responses evoked by the metaphors. These figures have been prepared by ranking each metaphor from 1 (the largest) to 10 (the smallest) on the number of Appropriate and Inappropriate commonplaces; Irrelevant and Translation responses; Interpretations and Elaborations; and Misinterpretations and Miselaborations elicited by each metaphor from the total sample.

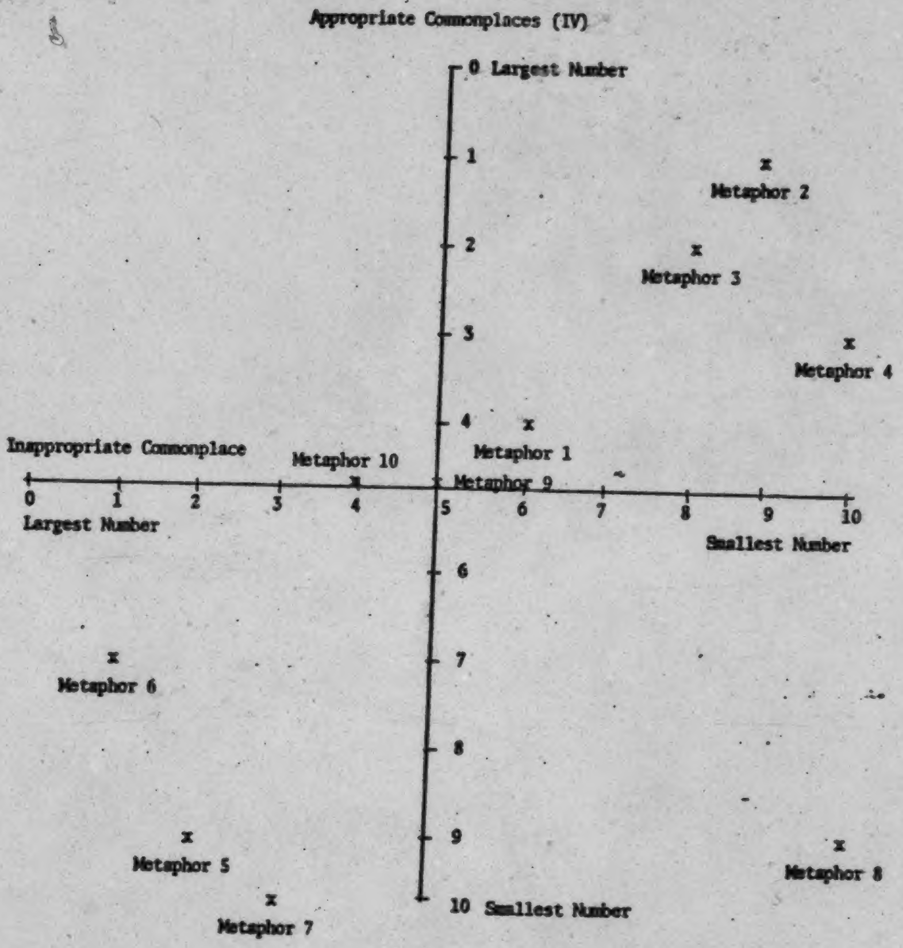

Figure 7 - Relative Number of Appropriate and Inappropriate Associated Commonplaces evoked by Metaphors.

Responses to Metaphor

Metaphor 1 can be seen from Table 23 and Figure 7 to have produced an intermediate number of appropriate and inappropriate commonplaces. It was fourth in the number of appropriate commonplaces evoked and sixth in the number of inappropriate commonplaces. The top left hand square of figure 7 contains the metaphors which have been best understood since they evoke more appropriate and less inappropriate commonplaces. Metaphor 1 just falls into this section but it is near the mid-point. The vast majority of category 4 responses to metaphor 1 (154) indicate the ability to select an appropriate commonplace for the metaphor and explain the link made.

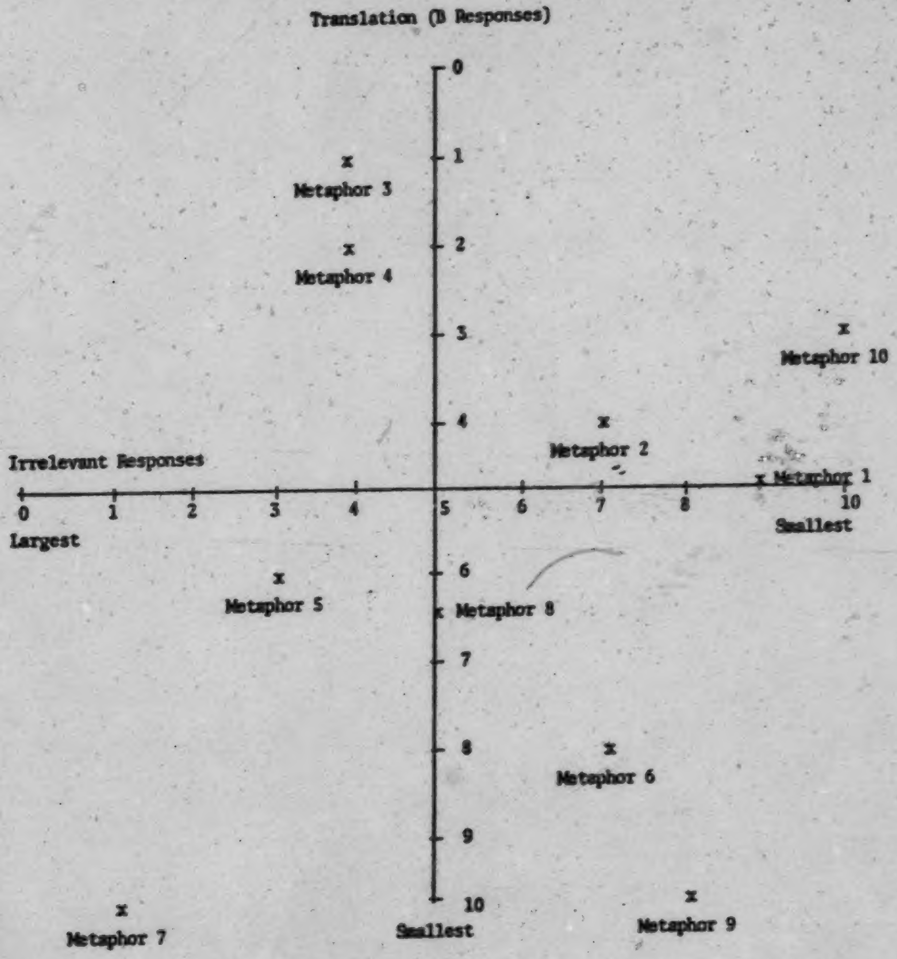

Figure 8- The Relative Number of Translation and Irrelevant Responses Evoked by Metaphors.

Table 24 and Figure 8 show the Translation and Irrelevant responses evoked by metaphor 1. It was ranked 5th in the number of translation responses evoked and 9th in the number of Irrelevant responses. There were few Irrelevant responses to this metaphor, indicating that it was not particularly difficult to understand. The number of Translation responses (which has previously been found to be related to higher level understanding) evoked by metaphor 1 is low (19). Figure 8 shows that metaphor 1 produced the second largest number of correct interpretations and the largest number of correct elaborations.

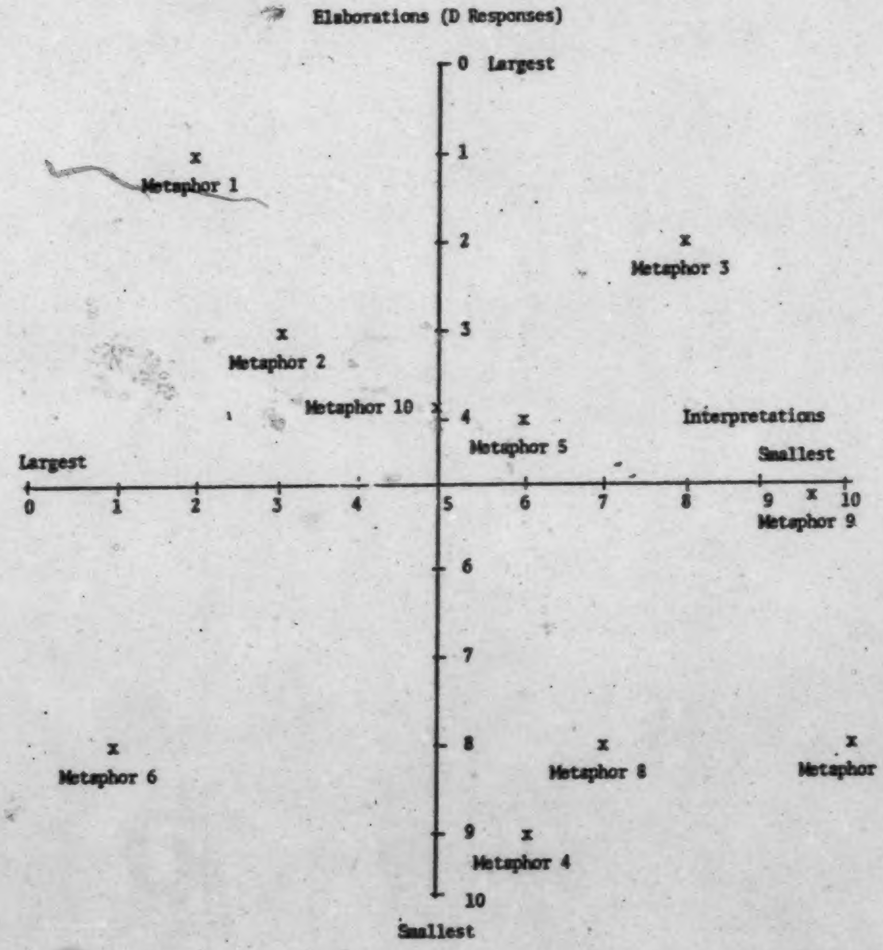

Figure 9 - The Relative Number of Correct Interpretations And Elaborations Evoked by Metaphors.

Table 25 shows that it produced a larger number of C1's (168) than most metaphors, an average number of C3's and more than average C5's, but less than average C6's. Therefore, the metaphor produced many good interpretations of the context and many acceptable interpretations of metaphor but few superior ones. There were a somewhat larger than usual number of evaluative elaborations (D=24) for this metaphor but otherwise it shows the typical picture of many correct descriptions (D5) and somewhat fewer incorrect descriptions (D10 and D11).

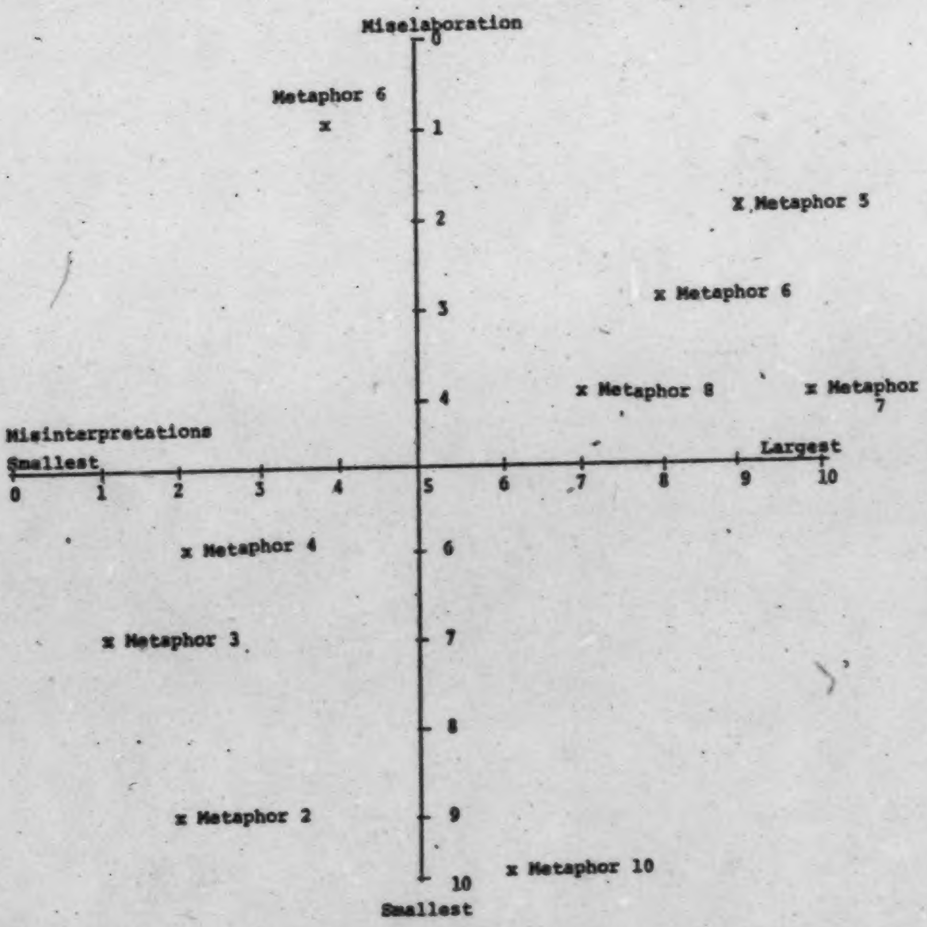

Figure 10 - The relative number of misinterpretations and miselaborations.

Metaphor 1 falls into the upper right hand corner of Figure 9 where metaphors which have been clearly interpreted and successfully elaborated are found. As would be expected, figure 10 shows that it has the smallest number of inappropriate elaborations but it has an intermediate number (5th) of interpretations.

The metaphor was originally judged simple so one would expect that it should be easily interpreted. Similarly, the concreteness and denotativeness of the metaphor should make it relatively easy for children to interpret since it relies on the common sensory associations of "tongues". The relatively few sophisticated interpretations of the metaphor would seem to reflect the characteristics of the metaphor. In this case the metaphor does not lend itself to higher level conceptualization. The fact that the metaphor is relatively common would also be reason to expect little difficulty in interpreting it or elaborating it.

Metaphor 2

> The little mare had whirled to face them keeping
> the colt behind her. With her teeth bared and her
> ears laid back, she looked half wolf for sure.

Judges' Ratings

One hundred percent of the judges rated this metaphor as concrete, while 90 percent of them rated it as common and simple. Seventy percent of the judges rated the metaphor as denotative and 30 percent of them rated it as connotative. In general, there was good agreement on the characteristics of this metaphor with some disagreement on the connotative-denotative dimension. Again, the metaphor is readily translatable, not particularly unusual and with specific physical concrete associations. Most judges rated the metaphor as denotative, perhaps due to the very definite use of the dictionary associations of "wolf" in the metaphor. The relatively few sophisticated interpretations of the metaphor would seem to reflect the characteristics of the metaphor. In this case, the metaphor does not lend itself to higher level conceptualization. There does not seem to be much question that the meanings of the word "wolf" used in this metaphor are relatively common to speakers of the language. However, the dissenting judges who classified the metaphor as connotative may have been influenced by the affective qualities of "wolfness" presented in the metaphor which do seem to establish the tone of harshness implied by the passage.

Responses to Metaphor

Figure 7 shows that metaphor 2 produced the largest number of appropriate commonplaces and the 7th largest number of inappropriate commonplaces. It falls well into the left upper corner of the diagram indicating that there was no difficulty in choosing and explaining appropriate commonplaces for the metaphor.

Figure 8 shows that metaphor 2 produced the 6th largest number of Irrelevant responses and the 4th largest number of Translation responses. Figure 9 places metaphor 2 in the upper right of the diagram indicating a relatively large number of Interpretive and Elaborative (3rd largest for both) responses. Good interpretations of context (C1) were relatively frequent for this metaphor, adequate interpretations of metaphor (C5), about average and sophisticated interpretations of metaphor (C6), more frequent than for most metaphors. The metaphor seems to lend itself to higher level interpretations. The context and the metaphor are readily understandable. The metaphor produced a relatively large number of elaborations. The only unusual facts in the pattern of Elaborative responses were that metaphor 2 evoked a larger number of affective statements (22) than occurred usually and a small number (9) of evaluative statements.

Very few misinterpretations (3rd smallest number) and mis-elaborations (2nd smallest) were evoked by this metaphor. Hence, it appears that the metaphor did not cause much difficulty in interpretation or elaboration. The nature of the metaphor lends itself to clarity in interpretation. It was found to be simple and denotative - qualities which make for ease of translation into literal terms and lack of disagreement over associations. Similarly, the metaphor is relatively common, so familiarity with it should help children to understand it. The fact that its associations are relatively concrete would also lead children of this age whose thinking is still primarily concrete, to perceive its meaning.

Metaphor 3

> The fog came on little cat feet. It sits looking
> on harbor and city on silent haunches and then
> moves on.

Judges' Ratings

This metaphor evoked considerable disagreement among judges concerning most of its qualities. The greatest agreement occurred on the simple-complex dimension where 70 percent of judges rated it as complex and 30 percent rated it as simple. The metaphor, in the author's view, is simple in so far as it can be readily understood, and explained, but complex in that it elicits a diverse extended set of associations to allow the fog to be seen in a fresh way. The metaphor is more like an "interaction" metaphor than a "substitution" or "comparison" metaphor. Forty percent of the judges rated the metaphor common and 60 percent rated it unusual. This disagreement is hard to understand - the author would rate the metaphor as unusual. Possibly the fact that the frame of the metaphor "cat" is relatively common may have evoked this disagreement. The important factor is the juxtaposition of frame and focus. There is complete division of judgements on the abstract-concrete dimension. This is interesting since the author believes this metaphor to have both concrete and abstract qualities (although he would argue the concrete to be dominant). The metaphor is concrete in that the sensory, perceptual aspects of the cat - its shape, its quietness, its furriness, contribute to our view of the fog, but abstract in that some more generalized evaluative cat qualities such as grace and watchfulness are involved in this metaphor. Sixty percent of the judges rated the metaphor as denotative and 40 percent of them rated it as connotative. Again this could be due to the involvement of both criterial and non-criterial associations for the frame of this metaphor.

Responses to Metaphor

Figure 7 shows that metaphor 3 evoked the second largest number of appropriate commonplaces and very few inappropriate commonplaces. Similarly, it evoked the largest number of Translation responses and few Irrelevant responses, as is shown by figure 9. Figure 10 shows that although the metaphor evoked the second largest number of correct Elaborative statements, it failed to provide a correspondingly large number of correct Interpretive statements. The metaphor is low on interpretations of context (C1's and C3's) as well as on adequate interpretations of metaphor (C5) but led to more superior interpretations (C6) than any other metaphor. This is an interesting pattern and suggests that if the metaphor was understood by readers, they perceived it on a complex level. This metaphor appears to be easily understood in terms of the Associated Commonplaces Test but providing relatively few correct Interpretive statements with a large number of correct Elaborative statements. Once a subject succeeded in understanding the metaphor, it seemed to be rich in the sense that it served as a catalyst for many elaborations and superior interpretations. The fact that metaphor 3 is an extended metaphor may have contributed to the difficulties in interpreting it, as well as the general high level of understanding and imagery produced if the reader could follow the intent of the passage.

The subjects' problems in interpretation and the larger number of elaborations would confirm the judges' perceptions of this metaphor as complex and giving scope for the shildren to supply a vivid picture if they grasped the metaphor. Similarly, the simplicity of the frame ('cat') would allow the subjects to provide a large number of correct associated commonplaces.

Metaphor 4

> The Princess Saralinda was tall, with fresias in her dark hair and she wore serenity brightly like the rainbow. It was not easy to tell her mouth from the roses, or her brow from the white lilac. Her voice was faraway music and her eyes were candles burning on a tranquil night.

Judges' Ratings

This metaphor did not present clear-cut judgements in three of the four categories. The only category where there was a clear distinction was the concrete-abstract dimension which was 70 percent to 30 percent for concrete. The metaphor appears to deal mainly with the physical sensory qualities of candles, hence its associations are largely concrete.

Sixty percent of the judges found the metaphor to be simple and common while 40 percent found it to be complex and unusual. A possible explanation for this split may be the difficulty in separating the comparison of eyes with candles, which is relatively simple and frequently made, from the extended metaphor "burning on a tranquil night" which contains many more ideas and associations as well as being relatively unusual. Sixty percent of the judges found the metaphor to be connotative and 40 percent judged it denotative. This dimension is particularly difficult to polarize since most metaphors have both denotative and connotative aspects. The denotative associations for candles are clearly involved in this metaphor but at the same time there appears to be a strong affective quality in the tone of the passage which derives from its metaphors, including the candle metaphor, making the connotative associations quite important.

Responses to Metaphor

Figure 7 shows that metaphor 4 evoked the smallest number of inappropriate commonplaces and a large number of appropriate commonplaces (third largest). Hence, there was little difficulty in understanding this metaphor as measured by the Associated Commonplaces Test. Figure 8 indicates the largest number of Translation responses evoked by metaphor 4 and the fourth largest number of Irrelevant responses. The metaphor produced an average number (6th) of correct interpretations but relatively few correct elaborations. Few misinterpretations (8th largest) were evoked by this metaphor but an intermediate number of miselaborations (6th largest). The passage itself was more difficult to interpret than the metaphor since there were fewer than average C1's and C3's but more than average C5's and C6's. The metaphorical passage produced less concrete imagery (D5's) than average but more evaluative (D1) and affective statements (D3). The difficulty in understanding the literal meaning of the passage may have led to fewer physical detail elaborations but there appears to have been some response to the rich descriptive quality of the passage. The metaphor does not present an obvious pattern in the responses evoked, which corresponds to the lack of agreement among judges concerning the qualities of the metaphor. The large number of Translation responses evoked may be due to attempts to extricate the meaning of this metaphor from the series of related metaphors concerning the Princess's appearance to be found in the passage.

Metaphor 5

> And they rang their tidings over the bandaged town, over the frozen foam of the powder and ice cream hills, over the crackling sea. It seemed that all the churches boomed for joy under my window, and the weather cocks crew for Christmas on our fence,

Judges' Ratings

There is complete agreement among judges that this is an unusual metaphor. This juxtaposition "bandaged town" has an arresting quality which most readers recognize as different. Most judges (80 percent) found this to be a complex metaphor. It would certainly seem that the metaphor is not easy to translate into literal terms except inadequately as in "covered in snow" which does not fully explain the metaphor. Readers who perceive the metaphor as simple, may not have perceived the deeper level of the metaphor. Seventy percent of judges found it denotative. The affective quality of this metaphor is again strongly present in the joyfulness of the passage - a factor which adds to the difficulty in adequately translating it. There is most disagreement among judges on the concrete-abstract dimension - 60 percent found the metaphor concrete and 40 percent found it abstract. The metaphor is effective perhaps because of the combination of the concrete and abstract. A striking visual image is evoked by this metaphor but it suggests generalized abstract qualities of isolation and completeness.

Responses to Metaphor

Metaphor 5 was a difficult metaphor (see figure 7) since it produced the second largest number of inappropriate commonplaces and the third smallest number of appropriate commonplaces, as well as having the largest number of Irrelevant responses. Similarly, this metaphor elicited the largest number of misinterpretations and the second largest number of miselaborations. Figure 9 shows that in terms of correct responses, the metaphor was ranked near the centre evoking (along with metaphor 4) the fourth smallest number of correct interpretations and the fourth largest (together with metaphor 10) number of correct elaborations. Table 25 shows that the passage produced a relatively large number of appropriate interpretations (C1's and C3's) but the metaphor itself produced very few correct interpretations (C5's and C6's). Hence, this time the metaphor was harder to interpret than its context. Many of the miselaborations were caused by subjects ignoring contextual clues and responding only to the (in this case) inappropriate but dominant meanings of the word. Thus a common misinterpretation and miselaboration was "it's been wounded; it's an old town' everyone is very sad."

It seems that the unusualness of the metaphor may have contributed to the difficulties in interpreting it. The juxtaposition of "bandaged" with "town" is perplexing for the unsophisticated reader since it uses associations for frame and focus which are not normally prominent. Surprisingly this strong tendency to misinterpret the metaphor even led many subjects to ignore obvious contextual clues suggesting the positive warm connotations surrounding Christmas.

Metaphor 6

> And they stood on the white welcome mats in the little drifted porches and huffed and puffed, making ghosts with their breath, and jogged from foot to foot.

Judges' Ratings

This metaphor was found by 70 percent of the judges to be simple and concrete, by 80 percent of the judges denotative and by 90 percent unusual. The metaphor is judged both simple and unusual, hence it appears to be readily explicable yet occurring infrequently. Despite the strong connotative quality of the word "ghost", it is interesting that the metaphor is judged denotative. Clearly, the present metaphor does not utilize the affective qualities of "ghost" but involves the concrete sensory quality of ghost to give a sharp image.

Responses to Metaphor

Metaphor 6 elicited the largest number of inappropriate commonplaces and the sixth largest number of appropriate commonplaces. The choice of so many inappropriate commonplaces is very probably due (as in metaphor 5) to the highly dominant but inappropriate associations of "ghosts", such as "scarey", "fright". In this case, there was not a corresponding difficulty in interpreting the metaphor as evidenced by the correct Interpretive statements made, since metaphor 6 produced the largest number of interpretations. The metaphor produced many good interpretations of context (C1) and adequate interpretations of metaphor (C5) but fewer than average sophisticated interpretations. Hence, the metaphor was able to be interpreted without too much difficulty although on a relatively mundane level, but the subjects tended to be misled by their attraction to inappropriate meanings into producing many miselaborations (the largest number).

The metaphor is therefore rather anomalous (as evidenced by its failure to fall into the other clusters of metaphors on the diagrams) in that it generally evoked many correct interpretations but also a relatively large number of incorrect interpretations and elaborations. In this case, the author would argue that the metaphor is primarily denotative but that the word "ghosts" has strong connotative characteristics in most contexts and has led to problems in totally grasping the metaphor.

Metaphor 7

> The 'poop-poop' rang out with a brazen shout in their ears, they had a moment's glimpse of an interior of glittering plate-glass and rich morrocco, and the magnificent motor-car, immense, breath-snatching, passionate, with its pilot tense and hugging his wheel, possessed all earth and air for the fraction of a second, flung an enveloping cloud of dust that blinded and enwrapped them utterly, and then dwindled to a speck in the far distance, changed back into a droning bee once more.

Judges' Ratings

There was a high degree of agreement among the judges concerning this metaphor. All the judges considered it complex and abstract, 90 percent thought it was unusual and 80 percent perceived it as being connotative. The author considers that this metaphor may be very difficult to interpret because it is one metaphor embedded in a passage containing more metaphors, which builds up to a climax. The reader may have difficulty separating this metaphor and giving it an interpretation removed from its context, yet understanding the context is a pre-requisite to understanding the metaphor.

Responses to Metaphor

This metaphor evoked the smallest number of appropriate commonplaces. Figure 8 shows that this metaphor also had the smallest number of Translation and the largest number of Irrelevant responses. The largest number of misinterpretations were also in response to metaphor 7. The fact that it evoked relatively few miselaborations (149, see table 26) may be due to the fact that it evoked very few Elaborative responses. Subjects usually gave an incorrect interpretation and no elaborations. Correct interpretations of both context and metaphor were very infrequent. The subjects' responses to this metaphor agree with the judges' ratings. As one would expect, a complex abstract and unusual metaphor is extremely difficult for children to understand. The abstractness of the metaphor seems to have been particularly potent in making it difficult for children. Although most children know the meaning of "possessed" (as illustrated by the large number of level 2 responses on the Associated Commonplaces Test) few could select the meaning appropriate to this context. Children tended to grasp on words they understood in the passage such as "bee" or "pilot" and construct a totally inappropriate interpretation of the passage and metaphor around these words taken literally, totally ignoring the abstractions in the passage. The extended network of metaphors also made this a particularly difficult passage for most children to understand.

Metaphor 8

> The two vast iron doors of the Black Gate under its frowning arch were fast closed. Upon the battlement nothing could be seen. All was silent but watchful.

Judges' Ratings

All the judges classified this metaphor as being connotative, but there was a complete lack of agreement as to whether it was concrete or abstract. As was the case with metaphor 3, the author would argue that this metaphor has both qualities. The metaphor is concrete in that a frown has a very definite shape, and abstract in that certain qualities associated with a frown (disapproval, dislike) are also present. There was also little agreement as to whether the metaphor was common or unusual, 40 percent of the judges rated it as common and 60 percent as unusual. The author would suggest that the juxtaposition of "frowning" with "arch" could be a possible reason for this disagreement. Frowning, used as a metaphor, is quite common in the author's opinion but it is not often juxtaposed with arch. Whether a judge rated this metaphor as common or unusual could depend on whether the judge ignored the juxtaposition and concentrated on frowning or whether the effect of "frowning" and "arch" was considered. There was considerable agreement about the simple-complex dimension, 70 percent of the judges seeing it as complex and 30 percent seeing it as simple. Hence the metaphor is not easy to translate into literal terms according to most of the judges.

Responses to Metaphor

Figure 7 shows that metaphor 8 had the smallest number of inappropriate commonplaces (along with metaphor 4) and also the second fewest appropriate commonplaces. In other words, while subjects did not often choose incorrect associations, neither did they choose or justify many correct associations. Metaphor 8 produced an intermediate number of Translation and Irrelevant responses (6th and 5th). Its position in the lower left quadrant of figure 9 shows that this metaphor evoked a relatively small number of correct Interpretive and Elaborative statements. Good interpretations of context (C1) and interpretations of metaphor (C5 and C6) were uncommon but somewhat less appropriate interpretations of context (C3) were more frequent than usual. Subjects appeared to grasp the general picture of the passage but could not clearly explain the precise meaning of the passage or the metaphor. Elaborations were also not quite appropriate as evidenced by the large number of D10's (logically possible but not quite apposite elaborations). Figure10 shows that it produced the fourth largest number of misinterpretive and miselaborative statements. As with metaphor 7, the judges' ratings (complex, abstract, unusual and connotative) are reflected in the passivity of the subjects' responses. These qualities appear to be associated with more difficulty in understanding the metaphor.

Metaphor 9

> They slept a little in uneasy fits, for their sweat grew chill on them, and the *hard stones bit them*, and they shivered. Out *of the North from the* Black Gate, there flowed whispering a-ong the ground a thin cold air.

Judges' Ratings

This metaphor was judged as falling clearly into distinct categories. All the judges perceived it as denotative and concrete. Ninety percent of the judges perceived it as simple and 80 percent judged it as unusual. Hence, the metaphor relies on the dictionary associations of its frame and focus, which tends to be concrete and thus relatively easy to explicate.

Responses to Metaphor

Metaphor 9 can be seen from figure 7 and table 23 to have produced an intermediate number of Associated Commonplaces. It was sixth on the number of appropriate commonplaces evoked and fifth on the number of inappropriate commonplaces.

Figure 8 shows that it produced the smallest number of Translation responses and the third smallest number of Irrelevant responses. The metaphor elicited the smallest number of correct interpretations and an intermediate number of elaborations as is shown by figure 9 . The context produced an average number of correct interpretations (C1's) and the metaphor evoked an average number of adequate interpretations (C5) but there were very few sophisticated interpretations (C6) of this metaphor. The paucity of higher level interpretations and elaborations is probably a reflection of the denotative and simple qualities of the metaphor - such metaphors often have a fairly obvious explanation and do not elicit complex conceptualizations. Figure 10 shows it produced the third largest number of misinterpretations and miselaborations.

These responses are interesting because it would be expected that a metaphor which is denotative and concrete would be relatively easy for the subjects to understand. The unusualness of the metaphor may, in this case, have outweighed the denotative-concrete aspects and made it difficult for the subjects to interpret.

Metaphor 10

> She sat at the window watching the evening invade the avenue. Her head was leaned against the window curtains and in her nostrils was the odor of dusty cretonne.

Judges' Ratings

There was quite good agreement among the judges on the characteristics of this metaphor. Eighty percent judged the metaphor simple, ninety percent judged it unusual, eighty percent rated it abstract and ninety percent judged it connotative. Therefore the metaphor appears to be easy to understand but uncommon, evoking abstract associations rather than sensory associations but with strong affect.

Responses to Metaphor

Figure 7 shows that this metaphor evoked an intermediate number of appropriate and inappropriate commonplaces. Its position in the upper right quadrant of figure 8 shows that metaphor 10 evoked the smallest number of Irrelevant responses and the third largest number of Translation responses. Figure 9 shows that there was an intermediate number of Interpretive and Translation responses for this metaphor, while figure 10 shows that it elicited an intermediate number of misinterpretations and the smallest number of miselaborations. The context appears to have led to more difficulty in interpretation (C1 and C3) than the metaphor since this metaphor evoked the largest number of adequate interpretations (C5) and an above average number of sophisticated interpretations (C6). The passage itself is quite brief and does not contain much information which may have led to fewer interpretations of it. Overall, this metaphor fell into the middle range of metaphors, being neither particularly difficult nor particularly easy to interpret. The pattern of responses shows that the metaphor itself was actually quite easy to understand. In spite of it being judged as unusual, abstract and connotative, subjects did not make many misinterpretations or miselaborations. Perhaps the simplicity of the metaphor outweighed the difficulty.

Summary

It is rather difficult to come up with any broad generalizations about the relationship between the qualities of metaphor and the nature of children's understanding of it. The procedure of attempting to find regularities between these variables serves the purpose of demonstrating the great complexity involved in a content analysis of metaphor and the near impossibility of coming up with any simple rules of explanation.

One would expect that simple, concrete, common and denotative metaphors would be easily understood compared to complex, abstract, unusual and connotative metaphors. To a considerable degree this is true but there are many combinations of interactions between the different dimensions which can produce a great variety of different patterns of responding.

It seems safe to say that metaphors which are common, simple or denotative tend to lend themselves less readily to imaginative or unusual conceptualizations of their meanings than unusual, complex or connotative metaphors. Concrete metaphors are not always easier than abstract metaphors although it seems to be more important whether the concrete associations pertinent to the metaphor are dominant for the word. If they are not the most obvious concrete associations being used in the metaphor, a concrete metaphor may be as complex and subtle as an abstract one.

CHAPTER 8

DEVELOPMENTAL DIFFERENCES IN THE QUALITY OF UNDERSTANDING

This chapter is an examination of some individual children's verbalizations about metaphor and an attempt to relate the qualitative differences perceived to Piaget's theory. In order to provide some examples of highly developed interpretations of metaphor in contrast to low level interpretations, the author selected the 10 protocols which received the highest overall weighted scores for verbalizations and the 10 protocols which received the lowest overall weighted scores. From these protocols, the examples discussed in this chapter are drawn. The selection was made without regard for grade level although most of the low scorers were from grade 6 and most of the high scorers from grade 8.

A comparison of these protocols seemed to suggest that there were some things in common amongst the best interpretations and amongst the poorest interpretations which were in agreement with Piagetian theory. The discussion which follows is an attempt to analyze the qualitative differences between responses according to the theory.

PIAGET

Piaget's theory seems to be particularly useful in discussing differences between interpretations of metaphor. According to Piaget (1968), the inception of the most mature stage of development, formal operations, occurs around the age of eleven or twelve. Hence one would expect most of the children in this study to have entered this stage. Piaget says that formal thought "provides thinking with an entirely new ability that detaches and liberates thinking from concrete reality and permits it to build its own reflections and theories" (p. 63). With the aid of language the child can evoke absent situations, free himself from perceptual immediacy and experience the world through a conceptual and rational framework. This ability to liberate thinking from the concrete and actual is based on the development and integration of representative schemata (such as concepts). Understanding metaphor would seem to require a number of these qualities of thought.

It would seem that the task of interpreting a new metaphor requires the process of adaptation, since representative schema which most children already have, are utilized in an entirely new context. In order to understand the metaphor the child must accommodate his already existing schema to the new situation. Many of the children's verbalizations illustrate this process of accommodation while some show that the child has been unable to accommodate the new "aliment", leading to attempts to interpret the metaphor by inappropriately using existing schema (assimilation). In the case of inappropriate application of schema without modification, the child seems to be in a state of disequilibrium with respect to the metaphor. Equilibrium is a state where there is compensation between external intrusion (the metaphor which utilizes familiar words in an unfamiliar context) and the activities of the subject (the modification of existing schemata for the familiar words to the unfamiliar context).

The difficulty that a child experiences in interpreting metaphors would be expected to be influenced by a number of characteristics of his schemata for the figure and frame of the metaphor. Firstly the completeness of the representative schemata should influence the ease of interpretation of the metaphor. If the child's concept of the word is only partial (a preconcept) then it is more likely that the metaphor will involve aspects of the concept which the child has not accommodated. Hence, while he might be able to interpret the word in its more common contexts, he will be unable to manage it in a novel context. Secondly, the degree to which the schema of the figure and frame of the metaphor overlap will influence the amount of accommodation that is necessary to understand the metaphor. Should the two schema have only a small amount in common the task of integrating them, necessary for interpreting the metaphor, will be more difficult than if there is a large amount of communality in the concepts involved. Finally, the child's ability to integrate and differentiate schema in understanding a metaphor may be influenced by the dominance of the figure or frame for him. If he has a relatively complete representative schema for the figure, for example, and a relatively weak and undeveloped schema for the frame it is likely that the figure may completely obscure the frame in the interpretation of the metaphor such as occurs in taking the metaphor literally.

CHARACTERISTICS OF IMMATURE THOUGHT

Egocentrism - Centration - Disequilibrium

Although most of the children in the present study could be expected to be at the formal-operational level of thought according to their age, there are many responses to metaphor among those of the grade 6 subjects which indicate characteristics of thinking of much earlier periods of development. The present selection is a discussion of some of the lower-level responses to metaphor and the manner in which they illustrate certain pre-formal-operational aspects of thought.

Egocentricity is a general term for a kind of inflexibility in thinking which leads children to experience difficulty in seeing things from points of view other than their own. While it first occurs in the young infant in sensory-motor activities, it can recur throughout the process of development, and tends to do so whenever the child is faced with some fresh and difficult cognitive task. Flavell describes the ebbing and flowing of egocentricity during development:

> ...egocentricism is likely to increase whenever, as development proceeds, the child begins to cope with a new and untried field of cognitive action. This burst of egocentrism slowly subsides as the child progressively masters the new field, only to reassert itself when still another domain is approached (Flavell, 1963:224).

The quality of responses to metaphor in the lower-scoring grade 6 protocols leads one to believe that metaphor is indeed a new field of cognitive action for these children since there are many characteristics of egocentrism about their responses. Indeed since these children are just entering formal operations, one would expect them to find abstract language devices such as metaphor, difficult, since they have not had any great exposure to them. The more unfamiliar the metaphor, the more likely one would expect egocentricity to be manifest in responses.

Metaphor 5 ("a bandaged town") appears to be a particularly difficult metaphor. "Bandaged" and "town" should act together to form a new concept of "town" for the reader. In Black's terms the interaction between "bandaged" and "town" should combine to produce a new cognitive structure. In Piaget's terms a new schema can be formed for the town.

An examination of the protocols shows clearly the difficulty that many children experience in decentrating from their dominant meanings of "bandaged" (wounds, blood, pain) to experience the sense in which bandaged is being used in the context (isolation, protection, covering). This was true for many children despite the wealth of contextual clues suggesting that there is happiness and rejoicing in the town.

> A sad town. It doesn't seem happy because you can't go outside because there's snow everywhere - you'd have to shovel the sidewalk.
>
> A sad town. A little town with churches in it and a guy looking out of his window all sad kind of and some birds crying on the fence.
>
> It might mean that the town was damaged or something and they fixed it up.

In all of these examples it seems that the child has been unable to distance himself from his predominant associations for the word "bandaged" and has produced responses characteristic of egocentric thought. The responses lack flexibility, they have fixated or centrated on an irrelevant aspect of meaning and do not make the necessary combinatorial link between the two diverse fields of experience.

In this particular metaphor, it seems that the vehicle predominates over the tenor. This has led to difficulty in less mature children because the meaning of the vehicle seems to have entirely obscured the tenor. Combinatorial activity, decentration and the task of integrating different schema appears to be a particularly complex task in metaphors where the meaning of one of the other parts (vehicle or tenor) more readily evokes associations in the reader. There are a number of other examples of disequilibrium in thought among the other responses to metaphor. Disequilibrium here being a state where the subject is unable to compensate for the external intrusion (the metaphor) by accommodating his existing schemata.

"Cat feet" ...well cat feet are kind of very small so I presume it means it came in little by little.

"Eyes are candles"
...well candles just glare and they just burn and then they brighten up.

"Ghosts with their breath"
...it's a haunted house.

"Hard stones bit them"
...well they bit them with their teeth.

"Possessed all earth and air"
...it can't control their fears because it can't go up in the air. It could go anywhere on earth or else up into the air and then come back down again.

All of the above examples illustrate the problem that children had in combining two disparate experiences to produce a new cognitive reality. Egocentricity in thinking is manifested in the predominant and irrelevant aspects of the meaning of one part of the metaphor which have been fixated upon.

For example, the size of the cat's feet is centered upon while the more important qualities of grace, quietness and smoothness are ignored. In the second example the response has centered upon the qualities of the candles without any attempt to explain how eyes are like candles. In the ghosts example, the predominant association for ghosts is of fear and haunting instead of the physical ectoplasmic appearance of ghosts which is relevant to this metaphor. Hence the transfer from ghosts to breath cannot be made. There has been no success in relating biting to stones, since the subject's strongest association for "bit" was teeth. The idea of the stones biting has been obscured by the salient but irrelevant meaning for "bit". In the final example one aspect of the vehicle ("the air") has been centered upon while the tenor has been entirely lost in the interpretation.

Decentration is the ability to take into account features which can balance or compensate for biasing effects of particular perceptions. In these examples decentration has not taken place sufficiently for the child to select the relevant aspects of the metaphors and integrate them. The extending of the schema by the process of accommodation has not taken place. Instead the responses indicate that existing schemata have been used inappropriately in an attempt to assimilate the new material. Instead of combining or extending the schemata for the tenor and vehicle, the schema for the dominant aspect (in most cases the vehicle) has been used in an attempt to interpret the metaphor. In all of the above cases this has resulted in a completely inappropriate interpretation of the metaphor. In most cases the subject probably has the appropriate meaning within his schemata (eg., "covered, protected, enclosed" for "bandaged") but he cannot extract it from the familiar meanings which have been more related to experience, both verbal and non-verbal, up to this point. The metaphors which have not led to so many misinterpretations because of centration on irrelevant meanings, tend to employ the more immediate and obvious aspects of the schema. For example, the metaphor "half-wolf" did not lead to this kind of difficulty even among the very low-scoring subjects. Also, metaphors where there is good overlapping of schemas (similarity of associations) led to less difficulty - such as "tongues of water".

Transductive thinking

Another feature of immature thought exemplified in children's interpretations of metaphor is transductive reasoning. Transductive thinking is a type of thinking where children reason from particular to particular without any clear evidence to support the inference. The child tends to link salient elements of situations and simply juxtapose them, omitting to connect them with true implicative and causal relations. According to Flavell:

> A multitude of diverse things are inchoately but intimately co-related within a global, all-encompassing schema (Flavell, p. 160).

Metaphorical language seems to lead some children back to this relatively primitive type of thinking. Perhaps the fact that metaphor does draw together different aspects of experience into a unifying idea tends to lend itself to transductive types of reasoning if the unifying idea is not understood. The true understanding of metaphor necessitates the developing of representative schema by combination and integration. In other words, there must be some logical link between the two aspects of experience (although in some poetic metaphors the logical aspect is minimal - for example Wheelwright's "diaphor"). If the child cannot make the appropriate cognitive jump between the two components of metaphor he falls back upon a simple juxtaposition of elements of the metaphor sometimes in an incongruous manner.

> The fog is just setting and there's a cat
> down by the harbour watching the ships come
> in and out.

In this example the two elements of the metaphor (fog and a cat) are simply put together in a sentence but no logical link is made between the elements.

> "There's all the saliva, it seems like a
> big pool of water."

Here the child has fixated upon a salient but irrelevant aspect of "tongue" and a link is made to water through this irrelevant association.

"Making noises like ghosts - haunting like." In this case the "huffing and puffing" mentioned in the context is the salient aspect of the image for the child. He has centred on the noise aspect of the scene and has tried to make a link connecting ghosts with children based upon this aspect.

Children sometimes took other parts of the passage in which the metaphor was embedded and used these other parts in their transductive reasoning. This is particularly common in metaphor 4 (Her eyes are candles) and metaphor 7 (possessed all earth and air). Both of the passages contained several metaphors, hence a large number of conflicting associations seem to have been evoked often leading to a transductive link.

Eyes were candles -

> Not really a princess - it's a sort of a flower - the dark hair is where the flower opens up and the things come out and it looks like a rainbow. Her eyes were the top of them, you know where the flower comes up - it's just like a candle, burning candles.

Possessed all earth and air -

> A bee, it's sort of a miracle - the bee is changing into a person and while it's going through the person he's going so fast that he can't see anything - just going in circles and he's losing all his air so then he stops and starts blowing back.

In the first case a transductive link is made between the flower and candle metaphor and in the second case between the bee metaphor and the "possessed all earth and air" metaphor.

The Real rather than the Potential

Whereas formal operational thinking is characterized by an emphasis upon "the possible", concrete operational thinking usually begins with "the real" - the physical, actual characteristics of the environment rather than any hypothetical, abstract, conceptualizations of it. The younger children in this study seem to show much more tendency to interpret metaphors in terms of the real rather than the potential. In relation to metaphor, this means that their interpretations relied on the more immediate sensory perceptual associations of the components of the metaphor rather than the more distant, abstract or affective associations. In many cases this is adequate for a good interpretation of metaphor, but in some cases some of the more subtle connotations of the metaphor are lost due to the inability of the child to go beyond the real to the potential.

Half-wolf -

> Her eyes were turned back and her teeth were showing just like a wolf.

Eyes were candles -

> Well they were bright - they kind of lit up or something.

The first response describes the physical appearance of the wolf but no further description of the affective qualities of the wolf's behavior are given. Similarly the link between candles and eyes is made successfully in the second example but there is no attempt to express the more subtle qualities of the princess which are implied by the metaphor. The responses are entirely unelaborated.

Bandaged town -

> Covered with snow. Bandages mean covering up something.

Frowning arch -

> A sort of a half circle - like a door.

In both of these examples a correct interpretation is given but it remains on the level of the real. There is no attempt to express the sense of protection and isolation in "Bandaged town" or the menace and fear of "frowning arch".

Globality

One of the features in the early development of schema is that they are originally global, diffuse and undifferentiated. There is a broad outline of meaning but without detail or elaboration. This is characteristic of the low-scoring protocols. In general they seem to have a much lower verbal output. Some of the statements are correct but so broad and general in outline that they clearly do not involve mature developed schemata. That is the repertoire of associations is fairly limited. Here are some examples of the truncated global responses found to all metaphors.

Tongues of water - "a whole bunch of water."

Half-wolf - "Scary, brave."

Cat-feet - "maybe a little at a time."

Candles - "they were pretty."

Bandaged town - "covered with snow."

Ghosts - "when they were breathing it turned out
to look like a ghost of something."

Possessed - "he thought he was really great."

Frowning arch - "an arch, sort of a plain over arch."

Hard stones bit - "they were cold and they shivered.
They were cold and hard."

Evening invade - "darkness set in. Night is coming.
That's all."

CHARACTERISTICS OF MATURE THOUGHT

Flexibility of Schemas and Combinatorial Activity

The high-scoring protocols selected provide a striking contrast to the low-scoring protocols just described and illustrate some of the essential characteristics of formal operational thought. Flavell describes the transition to formal operational thought:

> ...the adolescent has, through this new orientation, the potentiality of imagining all that might be there - both the very obvious and the very subtle - and thereby of much better insuring the finding of all that is there (Flavell, 1963:205).

The task of interpreting metaphor relies heavily on integrated and flexible representative schemata. It seems to be particularly important in the more difficult "interaction" metaphors for the child to be able to ignore the obvious in favour of the subtle. It is necessary for the child to avoid the biases provided by his own particular verbal, perceptual and sensory experience and "imagine all that might be there" in what is being conveyed by the writer. Schemas need to be mobile enough to be combinable with one another in different ways depending upon the requirements of the particular metaphor, hence they must contain a wide variety of meaning elements which are internally consistent with each other and from which the child can select and combine elements to produce a new cognitive reality for the metaphor. Perhaps the best way to illustrate this flexibility in thinking, which allows the child to avoid the distortions of centrations, is to give examples of superior responses to metaphor which typically led to egocentric thinking amongst younger children. In most of these examples the child selects from schema and combines the selected elements in order to produce a new interpretation for the metaphor. The responses indicate an ability to go beyond the most obvious and dominant interpretation and stretch the cognitive schemas towards those of the writer in an attempt to "find all that is there".

Cat feet -

> Well the fog is just creeping over the harbour and just as it starts it's just a little and then it covers the whole place. Like a cat creeps along. Well when a cat is going to attack a mouse or something it comes in really slowly, quietly and then it just pounces on it, it comes over everything.

In this example, the subject shows that he can select from his elaborate schema for cats the appropriate qualities which apply to the metaphorical frame of the fog.

Eyes were candles -

> It's describing this beautiful princess. Her eyes were really bright and twinkly, flickering to express a lot of things. Sometimes they could be dark and stormy but normally they were just at peace.

Notice how the child has perceived the diverse qualities of candles and used them to draw an elaborate picture of the princess's eyes. The interpretation is subtle because the child has extended the "fire" meanings of candles to extend beyond the usual "bright and shiny" to suggest the possibility of a contrasting darkness ("dark and stormy").

Bandaged town -

> It means the hills look white. ...all sort of wrappings, lights and trappings and stuff like that. Everybody is away in their houses. Bandaged could mean that everything was wrapped up and quiet.

Here the child has reached away from the ready associations of "bandaged" and "town" has been made transcending the immediate biases of experience.

Possessed all earth and air -

> I think it's a racing car and people are watching it go by. They just get a glimpse of it as it tears past. Everything was centered on it; it was the centre of attraction.

This example shows how the child has extracted the core meaning of the metaphor namely the power and prominence of the car and ignored the many irrelevent aspects of figure and frame.

Differentiation of Schema

One of the characteristics of the development of thought, according to Piaget, is that schema develop towards becoming more differentiated.

> ...differentiation has the result of dividing the original schema into several new schemas, each with a sharper more discriminating focus on reality. But it is characteristic of schemas not only to undergo individual changes of this kind but also to form ever more complex and interlocking relationships with other schemas (Flavell, p. 57).

This process of differentiation is prerequisite to understanding metaphor on a sophisticated level. In fact metaphor itself seems to be a device in language which facilitates the integration of verbal schemas into these complex inter-locking relationships that Piaget describes.

The high-scoring protocols contain a number of examples of differentiation of schemas. These examples are quite unlike the globality of the low-scoring responses. The sheer length and syntactical complexity of the verbal output in some of these responses is indicative of the differentiation of schemata involved. This is in sharp contrast to the brief global responses characteristic of the low-scoring protocols.

Her eyes were candles -

> She must be a really beautiful princess with red lips. The man that's writing this - he really likes her. Her eyes were lit up and bright. She was showing her feelings with her eyes and she was really happy. There is a handsome man in the corner she is thinking of.

This response illustrates not only the child's understanding of the metaphor "her eyes were candles" but an extension of the meaning that is given in the metaphor and its context to a development of a full description of the princess's feeling in relation to a "handsome man".

A frowning arch -

> Well it's sort of a gloomy place. There is no one there but it has a feeling of someone watching. A frowning arch is a gothic arch, all locked up. It may have been all scarred up and it looks weatherbeaten. It's probably mysterious and it sort of guards the place.

The child starts out describing the general feeling expressed in the passage with an elaboration of details of the scene suggesting a number of levels of differentiated meaning. This response shows the child's ability to go beyond the physical aspects of the frown to some of the more subtle tonal qualities of the passage.

Possessed all earth and air -

> It sounds as if it's a new type of car and the driver has taken it out and two young kids hear the car and see it. It's really nice inside. The driver is all excited and it seems to be going very fast. Possessed all earth and air means he felt as if he possessed all earth and air. That is, he could go anywhere at all - but before, it would take a while - like walking - but now he's got the car he feels he can really go anywhere.

At first the child identifies the tenor of the metaphor, namely a car (frequently children incorrectly identify the tenor in this metaphor) and then goes on to describe in detail the feelings of the driver and

and the reasons for them. In other words the child is able to differentiate several aspects of the passage - the nature of the car, the feelings of the driver and the reasons for his feelings.

Hypothetico-Deductive and Propositional Thinking

Strategies of thinking during formal operations are characteristically hypothetico-deductive in character. The child is able to reason by putting forward hypotheses and either confirming or rejecting them. The causal logical relationships between events or actions are perceived. Thinking is also characterised by the ability to cast reality into assertions called propositions and look at the relationship between these propositions in various ways. For example:

> It (bandaged town) could be recovering from some disaster, or it could appear to be bandaged or spotted with snow on the roof tops. Probably it was having snow on different locations, you know the second one I've said there.

The child has been able to hold these conflicting interpretations and make a judgement as to which is the correct one. The subject started with hypotheses and deduced from other context clues which was the most appropriate one.

Many of the high-scoring responses illustrate the manner in which children at the formal operational level take propositions (assertions or statements derived from evidence) and combine them in different ways. For example:

> I suppose it was very grand and important. In those days a car like that was an unusual thing and the guy must have been very pleased with himself racing down the highway in his fancy car.

This response illustrates propositional thinking. It contains a number of propositions "the car is very grand and important", "a car like that was very unusual in those days" and "he must have been feeling pleased with himself driving it". These propositions are abstracted from the data given in the context and then placed in logical relation to each other. In this manner the child has explained the metaphor. From the description given in the context it is deduced that a very important car is being described and the related notion that such a car was very unusual in those days. The child then goes on to argue that therefore the driver must have been feeling important, which is an explanation of the fact that he "possessed all earth and air". The metaphor has been analysed in detail and integrated with the context to come up with a highly rational interpretation.

> Whenever they breathe out it makes sort of a little white mist with water condensing; that's what makes the ghosts; when you breathe out on cold days it goes into weird shapes and that's what makes you think of ghosts; this weird shape vanishes after a while and that's what their breath does.

The first proposition here is really a general statement of a law concerning the manner in which air that is breathed out on cold days condenses and "makes sort of a little white mist". The statement about breath is explicitly explained in terms of this being a particular example of a general rule. Then the child links these qualities of breath ("that's what makes you think of ghosts") with statements about ghosts ("they go into weird shapes and they disappe[illegible]nce the child has taken a proposition about breath (taken [illegible] general law) and linked them to propositions about ghosts, showing where the two propositions overlap, and by this process explaining the metaphor.

The Potential rather than the Real

During the formal operational stage, thought is oriented towards the possible and the hypothetical. Thinking moves away from the reality of the physical data of the senses towards an anticipation of abstract "potential" properties of the environment. In the interpretation of metaphor this orientation away from the concrete towards the hypothetical is seen in two different ways. First in the ability to make a higher-order generalization about the details given in the passage and secondly in the ability to elaborate on the information given in the context by adding further imaginative descriptions.

Many of the higher-level responses indicate that the child has been able to make meaningful use of the diverse information presented in the metaphor and its context and put it into statements which contain the core meaning of the passage. The resulting statement usually succeeds in encompassing all or most of the information that is given or implied. The child is no longer distracted or centrated on the separate bits of information that are presented in the passage. He is able to integrate and combine the various facts to come up with a meaningful abstraction. Typically the metaphors which caused the most difficulty to younger children are handled by the high-scoring children in this sophisticated manner. That is, the use of a variety of specifics to come up with a generalization which expresses the essence of the metaphor.

Frowning arch -

> I suppose it just means it looks formidable.
> It couldn't be easily assailed.

Possessed all earth and air -

> Well, it seemed the prominent object at the

> time. It's something new to them - very impressive.

Hard stones bit -

> They are having a hard time sleeping which indicates to me that they are a bit nervous or frightened... . The ground was very uncomfortable.

All of these examples illustrate the way in which formal-operational thinking is able to go beyond the "real" details to apprehend the "potential". These generalizations seem to catch the intent and cognitive content of the metaphor. The frowning arch is perceived as "formidable", the car as "prominent" and "impressive". For "hard stones bit" the child makes the logical deduction that the people are frightened and that the ground is uncomfortable.

Children in the high-scoring group produced a number of delightful interpretations of the passages through imaginative elaboration of the possibilities inherent in the passage. This type of apprehension of the "potential" relies upon the expression of further details with the use of the child's own language in a manner congruent with the author's intent. The child does not simply "translate" the metaphor but he fills out the details of the new cognitive schema that he has formed for the object of the metaphor. Such interpretations are common where the meaning of the metaphor is very plain to the child. The child seems to be more daring in his interpretation where he has no doubts about the core meaning of the metaphor.

Tongues of water -

> Well somebody I guess is standing on top of the cliff during a storm. When the water strikes it sends streams of water up over the cliff. Tongues of water means sort of sprays: a jet of water coming out. There's a great

> storm on, the sky is all dressed in black;
> there's big waves in the ocean and water
> splashing on the cliff.

In this description the child has actually used metaphorical language ("the sky is all dressed in black") in order to paint a picture of the scene. The description of the sky is introduced by the child to complement the description of the sea and seems nicely attuned to the feelings in the metaphorical passage.

The "tongues of water" metaphor evoked many such vividly stated descriptions. The language tends to be affective - giving a good idea of the fierce power of the sea. The waves are described as "jets of water", "shooting", "sweeping", "grabbing", "slithering around" and "like a geyser".

Here are some other examples of the extremely vivid passages produced by children in an attempt to interpret the metaphors.

Evening invades -

> The darkness is sort of like little fingers
> creeping ahead, just sort of creeping in and
> it's starting to get darker and darker.

Bandaged town -

> ...it's all quiet except for the water which
> is kind of choppy, lapping against the shore.

Ghosts with their breath -

> ...on a cold day your breath condenses and
> freezes, drifts slowly away. Some rosy-
> cheeked children sitting on an old house with
> a verandah going around it, playing, with
> footprints all over the snow.

These responses illustrate how children were able to elaborate upon the content of the metaphorical passages. Their thinking is characteristic of formal operations in that it can go beyond the real to the potential.

SUMMARY

Some of Piaget's descriptions of various level of thinking have been used in this chapter as a basis for discussing the similarities and differences in children's interpretations of metaphor. The poorest and best responses to metaphors have been examined in the light of Piaget's theory which appears to be particularly useful as a unifying and integrating procedure. There are certain regularities in children's responses which seem to illustrate some characteristics of different stages of thought.

Although most of the children in this study could be expected from their age to be thinking at a formal-operational level, they certainly did not show this in their interpretations of metaphor. In fact many of the low-scoring responses showed the characteristics of the earlier pre-operational and concrete operational stages. The novelty and incongruity of metaphorical language to some of the children may have contributed to their difficulties in interpreting it. When children are presented with new and difficult material they tend to return to earlier stages of cognitive functioning.

Many of the low-scoring responses were egocentric, centrated and characterised by disequilibrium. That is the responses were lacking in flexibility - the child could not detach himself from the most dominant and obvious associations of the parts of the metaphor. This rigidity and fixation on irrelevancies led to lack of ability to combine the two disparate fields of experience which is necessary for understanding metaphor.

Thinking of a transductive nature where the salient features of metaphors are linked without logical basis was also common in the low-scoring responses. There was also an inability to go beyond concrete reality and a global diffuse quality to interpretations.

In contrast, most of the high-scoring protocols demonstrated thinking at a formal-operational level. There was a flexibility in word meaning which allowed the child to select appropriate meanings from a wide variety of possibilities and combine them into a new cognitive schema for the metaphor. The original schemas for figure and frame of the metaphors were sufficiently extensive and differentiated to allow the child to form hypotheses and select or reject them on the basis of contextual or experiential cues. There was an ability to abstract from scattered information given in the passages and formulate propositions expressing the essential features. The capacity of the children for going beyond the real to the potential was also apparent in the creative and subtle use of language to elaborate the meaning of the metaphor.

CHAPTER 9

SUMMARY CONCLUSIONS AND IMPLICATIONS

SUMMARY

The main purpose of this study was to investigate and compare the understanding that grade 6 and grade 8 children obtain from reading passages containing metaphors. The verbal retrospective responses of forty high socioeconomic status children from each grade level to ten metaphors, embedded in a sentence or paragraph, were examined. The verbal responses, obtained individually in an interview setting, were classified 'a posteriori' into categories suggested by the data, in order to avoid imposing a preconceived order on the data. In addition to the verbal retrospective analysis, two tests were administered. The Associated Commonplaces Test was constructed by the author from Black's theory of metaphor. Black's theory suggests that understanding metaphor requires the selection of associated commonplaces for the subsidiary subject of a metaphor and the application and integration of these associations with the main subject of a metaphor. The test consisted of a list of words for each metaphor, some of which were appropriate to the main subject and some of which were inappropriate. Children were required to choose appropriate words and explain how they were applicable to the metaphor. Finally, the N.C.T.E. Look at Literature test was administered as a standardized test of higher level critical reading and appreciation of literature.

In the data analysis attention was given to the number and nature of different kinds of responses produced on the verbal retrospections and the Associated Commonplaces Test. The relationship between children's understanding of metaphor expressed verbally and their performance on the Look at Literature test was examined. The understanding of metaphor of grade 6 and grade 8 children on the different measures was compared. The metaphors used in the study were presented to a panel of judges who were asked to judge them along four dimensions devised by the author out of theories of metaphor. The characteristics of the metaphors as described by the judges were then examined in relation to the types of responses produced on the verbal retrospections and the Associated Commonplaces Test. Finally, an informal descriptive analysis of the best and poorest verbal retrospective responses to metaphor was carried out in the light of Piaget's theory of intellectual development.

FINDINGS AND CONCLUSIONS

Question 1

> To what extent are children able to select and explain appropriate commonplaces for the main subject of a metaphorical statement from the network of associated commonplaces attached to the subsidiary subject and from unrelated words?

The Associated Commonplaces Test required subjects to select from a list of fourteen possible associations for the subsidiary subject of a metaphor those words which were the most appropriate to both the main and subsidiary subject and explain why the associations were appropriate. A hierarchy of responding was apparent in the way children went about this task. At the most sophisticated level the subject could make an associated commonplaces selection which was appropriate to the metaphor and as well gave a rational explanation for the link. At a less sophisticated level, the subject could make appropriate selections but was unable to explain the link. A poorer response again was the selection of an association appropriate only to the subsidiary subject of the metaphor while the most inferior response of all was the choice of a word which had no apparent relation to any aspect of the metaphor.

The Associated Commonplaces Test data indicated that most children in grade 6 and grade 8 from high socioeconomic status areas are well able to interpret metaphor on the most advanced level. Not only can they find the meaning which unites the main and subsidiary subject of a metaphor, but they are able to explain the basis for their understanding of the link (category 4 responses). Over half of all the Associated Commonplaces responses occurred at this uppermost level of the hierarchy. Next most frequent (at about half the occurrence) was the ability to select the appropriate meanings without the ability to explain them (category 3 responses). Somewhat less likely again was the choice of an association of the subsidiary subject (category 2 responses) while the choice of unrelated words (category 1 responses) was extremely uncommon.

It may, therefore, be concluded that in general highly verbal middle class grade 6 and grade 8 children have little problem in interpreting the majority of metaphors that they are exposed to at an appropriate level of difficulty. That is, they are usually able to carry out the process of selecting appropriate associations from the network of meanings attached to the subsidiary subject of a metaphor and linking them to the main subject and are aware of the logical basis from the link. When metaphorical language is presented to verbally mature grade 6 and grade 8 children, the majority are quite capable of making the cognitive leap from the frame to the figure of the metaphor. Children of this age and background can generally be expected to have little difficulty in using their wide vocabulary and extensive meaning associations to understand metaphors. The Associated Commonplaces data indicated that low level and intermediate level choices were relatively infrequent whereas high level responses were made very frequently. The Associated Commonplaces Test is perhaps most sensitive to cognitive processes and the present sample seems to be most competent in this respect.

Question 2

> To what extent are children able to explain passages containing metaphors? To what extent do children produce Irrelevant, Translation, Interpretive and Elaborative types of response?

In this study the children were asked to answer questions about the metaphors in an interview situation. Their verbal retrospections and answers to the questions about the metaphors were later categorized by the investigator a posteriori and found to fall into four broad classifications: Irrelevant responses, Translation responses, Interpretive responses and Elaborative responses. The most frequently made response was the Interpretive response, which was more commonly correct than incorrect. Interpretive responses are defined as the use of information which is in the passage to make inferences about the meaning of the passage. Second most frequent was the elaborative response, which takes ideas stated in the passage and adds more detail to the mood or atmosphere of the passage through various devices. About half the Elaborative responses were appropriate and half were inappropriate. Irrelevant responses (relatively inferior responses such as repetitions) and Translation responses (relatively straightforward paraphrases of the passages) occurred at a much lower level than the Interpretive and Elaborative responses, their frequency being about one-tenth of the Interpretive responses. Hence, children are most likely to start with information given in the metaphorical passage, then attempt to elaborate upon it, but are relatively unlikely to make direct paraphrases of the information; to use redundancy, hesitancies or indicate no knowledge of the meaning.

Particular sub-categories of response occurred more often within Interpretive and Elaborative categories. For example, among Interpretive responses, children are most likely to make inferences from the context but they are quite unlikely to overtly mention a personal experience in making an inference. A relatively large number of responses are made to the metaphor itself - the larger proportion on a relatively obvious level but a smaller number showing a high degree of reflection and refinement of judgement Misinterpretations of all kinds occurred relatively sparsely, but when they did occur they were usually due to misuse of context (rather than experience) or use of inappropriate metaphorical associations.

With Elaborative responses there is much less variability than for Interpretive responses in the type of elaboration given. It is extremely common for children to elaborate by describing possible concrete details or factual information about the passage, quite uncommon for them to use evaluative language, and very unlikely for them to use affect, generalizations, or illustrations from personal experience.

The verbal retrospective method goes beyond the Associated Commonplaces Test in that it suggests in more detail some of the cognitive and affective processes involved in children's understanding of metaphor. The nature of some of the reading skills required for interpreting metaphor are revealed in the categorisation as well as some of the pitfalls of misinterpretation and miselaboration which may occur. Some of the most important tasks in reading metaphor are the direct translation of the context, the making of inferences from the context and imaginative extensions from the context. The latter skill was illustrated much less frequently in the present sample than the previous two. On a cognitive level the sample generally showed a high level of functioning. In the affective domain, there was much less facility so that children infrequently made imaginative or creative interpretations of metaphor.

Question 3

> What is the nature of the relationship between children's ability to select an associated commonplace for a metaphor, their ability to verbalize the meanings of metaphors retrospectively and their performance on a multiple choice test of critical reading and literary appreciation?
>
> Research Hypothesis: Children who are able to produce high level responses to the Associated Commonplaces Test will also tend to produce high level responses during verbal retrospection and will score higher on the N.C.T.E. Look at Literature test.

> Null Hypothesis A: There is no significant correlation between the overall scores or the category scores of the Associated Commonplaces test with the total scores on the category scores of the verbal retrospections.

Correlational analyses of the category, total and overall scores on the Associated Commonplaces and verbal retrospections reveal several significant correlations. Hence, Null Hypothesis A was rejected. The following significant correlations were found:

1. A significant ($p < 0.05$) negative correlation between category 1 on the Associated Commonplaces Test and B2 (translation) responses.
2. A significant ($p < 0.05$) negative correlation between category 1 on the Associated Commonplaces and overall B (translation) responses.
3. A significant ($p < 0.01$) positive correlation between category 4 on the Associated Commonplaces Test and category C6 (mature interpretation of metaphor) response.
4. A significant ($p < 0.01$) positive correlation between overall scores on the Associated Commonplaces Test and category C6 (mature interpretation of metaphor) responses.
5. A significant ($p < 0.01$) positive correlation between category 4 on the Associated Commonplaces Test and the overall C (interpretive) response.
6. A significant ($p < 0.05$) positive correlation between category 4 on the Associated Commonplaces Test and category C1 (logical use of context) response.
7. A significant ($p < 0.05$) positive correlation between overall scores on the Associated Commonplaces Test and category C1 (logical use of context) response.

8. A significant positive correlation ($p < 0.05$) between category 2 of the Associated Commonplaces Test and category C7 (failure to understand figurative connotations).

9. A significant ($p < 0.01$) positive correlation between the overall scores on the Associated Commonplaces and category D1 (evaluative elaboration).

10. A significant ($p < 0.01$) positive correlation between category 4 on the Associated Commonplaces Test and category D3 (generalizations).

11. A significant ($p < 0.01$) positive correlation between category 1 on the Associated Commonplaces Test and category D9 (incorrect egocentric elaboration).

12. A significant ($p < 0.01$) positive correlation between category 4 on the Associated Commonplaces Test and category D9 (incorrect egocentric elaboration).

13. A significant ($p < 0.05$) positive correlation between category 1 on the Associated Commonplaces Test and category D10 (improbable details).

14. A significant ($p < 0.05$) positive correlation between category 1 on the Associated Commonplaces Test and category D11 (incorrect details).

15. A significant ($p < 0.01$) negative correlation between category 3 on the Associated Commonplaces Test and category D11 (incorrect details).

16. A significant ($p < 0.01$) negative correlation between category 4 on the Associated Commonplaces Test and category D11 (incorrect details).

Null Hypothesis B: There is no significant correlation between scores on the N.C.T.E. Look at Literature Test and:

(i) category, total or overall scores on the Associated Commonplaces Test

(ii) category, total or overall scores for verbal retrospections.

Correlational analyses of the category, total and overall scores on the Associated Commonplaces Test, the verbal retrospection and the Look at Literature Test indicate a number of significant correlations leading to the rejection of Null Hypotheses B1 and 11. The following significant correlations were found:

1. A significant ($p < 0.05$) positive correlation between the Look at Literature test and total B (translation) response.
2. A significant ($p < 0.05$) positive correlation between the Look at Literature test and category C1 (logical use of context) response.
3. A significant ($p < 0.01$) positive correlation between the Look at Literature test and category C6 (significant understanding of metaphor) response.
4. A significant ($p < 0.01$) negative correlation between the Look at Literature test and category C7 (failure to understand figurative connotations) response.
5. A significant ($p < 0.01$) negative correlation between the Look at Literature test and category C9 (selection of unappropriate commonplaces) response.
6. A significant ($p < 0.01$) negative correlation between the Look at Literature test and category C11 (taking figurative expression literally) response.
7. A significant ($p < 0.01$) positive correlation between the Look at

Literature test and overall interpretive C response.

8. A significant ($p < 0.01$) positive correlation between the Look at Literature test and category D1 (evaluative elaborations) response.
9. A significant ($p < 0.05$) positive correlation between the Look at Literature test and category D5 (elaborative concrete details) response.
10. A significant ($p < 0.01$) negative correlation between the Look at Literature test and category D9 (incorrect egocentric elaboration) response.
11. A significant ($p < 0.01$) negative correlation between the Look at Literature test and category D11 (irrelevant concrete details) response.
12. A significant ($p < 0.01$) positive correlation between the Look at Literature test and overall D (elaborative) responses.

The data, therefore, support the research hypothesis that high level responses on the Associated Commonplaces Test are associated with high level responses on verbal retrospection and vice versa. Subjects who chose more unrelated words on the Associated Commonplaces Test (category 1) made fewer Translation responses. (Translation responses usually were an index of or good capacity for extracting information from the passage). The choice of fewer rationalized links (category 4) was associated with lower overall weighted scores on the Associated Commonplaces Test. The ability to make higher subtle and imaginative interpretations of metaphor (C6) as well as logical interpretations of context (C3) are also related to good performance on the Associated Commonplaces Test. Conversely the occurrence of misinterpretations (C7) is positively related to the choice of unrelated words (category 1) (on the Associated Commonplaces Test, an indicator of low level responding).

Similarly the correlations with elaborative sub-categories indicate a positive relationship between low level responding on the Associated Commonplaces (choice of category 1 and 2) and inferior elaborative statements (D9, D10, and D11)- Also, high level responding on the Associated Commonplaces Test (choice of category 4 and high overall scores) was associated with more superior elaborations (D1 and D3) and fewer low level elaborations. (D9, D10 and D11). There is a tendency for the responses at the upper end of the Associated Commonplaces heirarchy to occur concomitantly with more translation, correct interpretive and correct elaborative responses.

The data also support the research hypothesis that superior scores on the Look at Literature test are related to high level responding on the Associated Commonplaces Test and the verbal retrospections. A greater number of translation responses, correct logical interpretations of context and sophisticated interpretations of metaphor were associated with higher scores on the Look at Literature test. Also there were negative correlations between misinterpretations of various kinds and Look at Literature scores. Similarly high Look at Literature scores were associated with more superior elaborations (D1 and D5) and fewer inferior elaborations (D9 and D11). The positive relationship between Look at Literature scores and overall D scores is also indicative that there is a relationship between the two measures.

It may, therefore, be concluded that there is a definite relationship between highly verbal, middle-class grade 6 and grade 8 children's ability to understand metaphorical language when it is measured in several different ways. Firstly, the ability to select and explain apposite associated commonplaces for the main and subsidiary subject of a metaphor is related to the ability to freely verbalize explanations of a metaphorical passage in an interview situation. Subjects who produce high-level responses on the Associated Commonplaces Test also tended to make more good Translation, Interpretive and Elaborative responses on the verbal retrospection. Secondly, the ability to appreciate and creatively interpret literature as measured by the N.C.T.E. Look at Literature test is related both to the ability to select and explain associations on the Associated Commonplaces Test and to the choice of good translation, interpretive and elaborative responses about metaphors in verbal retrospection. Despite the considerable differences in the three measuring instruments they are all concerned to some extent with such factors as the manner in which children utilize and infer from contextual information, select from an array of meanings, integrate different meanings and imaginatively elaborate the possibilities which are present in the actual metaphorical passage. There is support for the view that understanding written metaphor is a higher level cognitive skill which is an integral part of the reading process.

Question 4

> How do grade 6 and grade 8 children differ in their ability to select and explain appropriate commonplaces for the main subject of a metaphorical statement from the network of associated commonplaces attached to the subsidiary subject?
>
> Research Hypothesis: Grade 8 children will produce more high level responses and fewer low level responses than grade 6 children.
>
> Null Hypothesis: There are no significant differences between the mean overall scores or the mean category scores on the Associated Commonplaces test of grade 6 and grade 8.

Several significant differences are revealed by the use of t-tests on the means of grade 6 and grade 8 category, overall and total scores. Thus the Null Hypothesis is rejected. The following means were significantly different:

1. Grade 6 had a significantly ($p < 0.05$) higher mean category score than grade 8.
2. Grade 8 had a significantly ($p < 0.05$) higher mean category 4 score than grade 6.
3. Grade 8 had a significantly ($p < 0.01$) higher mean overall score than grade 6.

Hence grade 8 children do produce more category 4 responses which are at the most superior level of the hierarchy and fewer category 1 responses which are at the most inferior level of the hierarchy, than grade 6 children. Although category 2 and 3 means were not significantly different, the overall mean was significantly higher for grade 8. The overall mean is based upon all 4 categories with more weight being given to higher level responses.

It can be concluded that grade 8 children are better able to select and explain associated commonplaces appropriate to the subsidiary and main subject of the metaphor than grade 6 children. Also, grade 8 children are less likely to choose totally unrelated words when asked to choose associations appropriate to a metaphor. In other words, grade 8 children are better at interpreting metaphor through associated commonplaces than grade 6 children.

Question 5

How do grade 6 and grade 8 children differ in their ability to verbally retrospect about passages containing metaphors? To what extent do they differ in the production of Irrelevant, Translation, Interpretive and elaborative responses?

Research Hypothesis: Grade 8 children will produce fewer low level and more high level responses than grade 6 children when they verbally retrospect about passages containing metaphors.

Null Hypothesis: There is no significant difference between the mean overall scores or the mean category scores of grade 6 and grade 8 children on verbal retrospective categories.

The Null Hypothesis must be rejected since the following significant differences between means were found:

1. Grade 6 children had significantly ($p = < .01$, $p < 0.01$) fewer B1 and B2 translation responses than grade 8.
2. Grade 6 had significantly fewer ($p < 0.05$) C1 responses (logical interpretations of context) than grade 8; significantly fewer ($p < 0.01$) C6 responses (sophisticated interpretation of metaphor); significantly more ($p < 0.05$) C9 responses (selection of inappropriate commonplaces); significantly more C11 responses (taking figurative expression literally). Grade 6 also had a significantly lower (p 0.01) overall mean for interpretive responses than grade 8.
3. Grade 6 had significantly fewer ($p < 0.01$) D1 responses (evaluative elaborations) than grade 8; significantly fewer ($p < 0.01$) D3 responses (generalizations); significantly fewer ($p < 0.05$) D6 responses (irrelevant evaluations). Grade 6 had significantly ($p < 0.01$) more D9 responses (inappropriate illustrations) and significantly

($p < 0.01$) more D11 responses (irrelevant details). Grade 6 also had a significantly lower (p 0.01) overall mean for Elaborative responses than grade 8.

In general it can be seen that there is a good support for the hypothesis that grade 6 children will differ from grade 8 children in the direction of making fewer higher level responses and more low level responses. Grade 8 children make more Translation responses, more appropriate Interpretive responses (C1, C6, and C overall) and more appropriate Elaborative responses (D1, D3, D4, D overall) than grade 6 children. Although the grades do not differ significantly from each other in every relevant sub-category, the trend for grade 8 to be superior is clear in the significantly better overall Interpretive and Elaborative scores of the older grade. Overall scores are based on the weighted sums of the different categories. Where differences between sub-categories are significant they are, with only one exception, in the direction of the older grade having more high level responses and the younger grade having more low level responses. The exception is where grade 8 produce a greater number of D6 responses than grade 6. These responses are irrelevant evaluative statements. They occur at a very low rate for both grades (total 13 for grade 6 and 35 for grade 8). Perhaps the errors are due to the grade 8 subject's greater tendency to use evaluative language either correctly or incorrectly with a natural increase in grade 8 subject's errors.

There was no significant difference in Irrelevant responses between the two grade levels. These relatively low level responses could have been expected to be more common in younger children but the lack of any difference seems to suggest that there is a similar amount of hesitancy and redundancy at both these age levels. Irrelevant responses do not seem to be a particularly important indicator of real failure to understand a metaphor. Such failures in understanding showed up rather in misinterpretations and miselaborations.

Another interesting lack of difference between grade 6 and grade 8 was in the number of relatively pedestrian interpretations of metaphor (C5). Both grades produced about the same number of C5 responses. It was only in the greater production of relatively sophisticated responses (C6) that grade 8 was clearly superior. Similarly the most common correct Elaborative response, the concrete detail (D5), did not occur at a different rate in the two grades. Hence, the two grade levels were similar in their obvious but correct Interpretive and Elaborative responses.

It can be concluded that grade 6 and grade 8 children do differ from each other in the nature of their verbal retrospections. Grade 8 children are better able to extract information from the passage, (Translation responses), more efficient at making inferences from the information they extract (Interpretive responses) and more flexible in creating ideas about the passage (Elaborative responses). The only major type of response which occurs at about a similar level in both grades are Irrelevant responses, that is responses showing lack of knowledge, hesitancy or redundancy.

Question 6

> How do responses to the ten metaphors differ either on the Associated Commonplaces Test or in verbal retrospections? If particular metaphors produce different responses at different ages, what characteristics of the metaphors might have led to the difference?

Since there have been no statistical tests performed of the differences between the responses to metaphors, it is a delicate question to judge how the patterns of responses differ. The author has, however, used his subjective judgement upon the data in an attempt to identify any important similarities or differences between the characteristics and responses of metaphor.

To sum up the contribution of these findings to question 6, it seems necessary to avoid the detailed analysis of comparing frequencies for the ten metaphors which has been presented in chapter 7.

The writer is left with the overall impression that there were remarkable similarities in the patterns of sub-category scores among the ten metaphors. The degree of similarity is all the more remarkable when the particular metaphors are examined since they describe some very different events and experiences. For example, it was true for all metaphors, except one particularly difficult metaphor, that the responses given to the Associated Commonplaces Test occurred in descending frequency as their quality declined. That is the highest level response was most common and the lowest level response was least common.

For the verbal retrospections too, there was some communality of responding among the ten metaphors. Irrelevant responses occurred at about a similar very low level for all ten responses. There was more variation in the number of Translation responses (also relatively low in frequency) among metaphors. Metaphors leading to many Translation responses either seemed to contain many context clues about the metaphor in the passage or the metaphor itself appeared to be highly dense in meaning.

Interpretive responses are a great deal more usual for all of the metaphors. When the total correct Interpretive and total incorrect Interpretive responses for the ten metaphors are examined the range is only about one hundred for both (if metaphor 7 is excluded). All metaphors produced more correct than incorrect responses. Most metaphors led to a great many interpretations of the context. All metaphors led to more logically correct contextual interpretations (C1) than logically possible contextual interpretations. There were negligible numbers of interpretations relying on experience for any of the metaphors. The other two correct Interpretation responses were those which were derived from the actual metaphorical phrase itself. It was more common for metaphors to elicit a greater number of obvious interpretations (C5's) than sophisticated interpretations (C6's). In the four cases where a metaphor led to more sophisticated interpretations than obvious interpretations the metaphors seemed to be more difficult, and unusual. The two most common misinterpretations were due to the incorrect use of context and the inappropriate choice of metaphorical commonplace. Two particular metaphors had unusually large numbers of these misinterpretations, firstly the highly abstract metaphor 7, and secondly the highly unusual metaphor 5. The other misinterpretations were fairly evenly spread over the ten metaphors.

There was little variability in the Elaborative responses produced by the ten metaphors. These occurred at a lower level than Interpretive responses and were quite likely to be incorrect. Four of the metaphors evoked more correct than incorrect Elaborative responses and six metaphors evoked less correct than incorrect Elaborative responses. Obviously metaphors which caused more difficulty in interpretation also led to difficulty in elaboration. There were very tiny numbers of responses which involved generalizations, descriptions of emotions, or illustrations from personal experience among all 10 metaphors. (One exception is that metaphor 7 elicited a large number of inappropriate illustrations). There was a uniformly high tendency for metaphors to elicit the sort of descriptive language relying on the child's imagination for everyday images which could relate to the scene. The abstract, complex metaphors tended to be somewhat less evocative of appropriate concrete details and more evocative of inappropriate or logically possible concrete details. The only other elaboration which occurred in numbers worth mentioning was the evaluative judgement of the passage but again there were no marked differences between the metaphors.

Unfortunately, the question of which characteristics of metaphor led to any differences in response patterns is extremely difficult to answer. The writer attempted with the aid of ten judges to classify the metaphors along certain dimensions. It proved impossible to produce many broad generalizations relating to qualities of metaphor to particular response patterns. The study certainly showed the great complexity of such a content analysis of metaphor.

The only conclusions which seem justified are quite broad. First, simple, concrete, common and denotative metaphors are usually more easily understood by children than complex, abstract, unusual and connotative metaphors. Unfortunately, few metaphors are clearly dimensionalized on all these characteristics so a great combination of interactions between qualities are possible. Secondly, metaphors which are unusual, complex, abstract or connotative seem to lend themselves more readily to more sophisticated, subtle and creative interpretations than do simple, common, concrete or denotative metaphors. Concrete metaphors may be, however, extremely difficult to interpret if they utilize concrete associations which are quite lacking in strength for the word meaning. In general the regularity of the relationship between judges' ratings of the dimensions of metaphor and the responses to metaphor is quite unclear.

Question 7

> What relation do the qualitative differences between the highest and lowest scoring verbal retrospective responses have to a Piagetian interpretation of intellectual development?

In order to contrast some highly mature examples of interpretation of metaphors with some more immature examples, a selection was made of the highest and lowest scoring protocols on the verbal retrospections. Piaget's descriptions of the development of thinking appeared to be in good agreement with the nature of these responses. From a classification point of view, though, surprisingly many examples were found of stages of thinking which would be expected to be completed for these children considering their age.

The age of the sample suggests that their thinking would fall into the most mature, formal operational stage, but an examination of the low scoring protocols indicates that the performance on the task of interpreting does not always reach such a mature level. Interpretation of metaphor seems to be a new and challenging cognitive task which tends to force children into earlier types of thinking. Many of the low scoring responses are egocentric, showing a kind of inflexibility in which the child experiences difficulty in seeing things from points of view other than his own. The ability to distance oneself from the predominant association for words is particularly important in metaphor so the combination of egocentricity, decentration and disequilibrium leads to many misinterpretations of metaphor.

Another characteristic of immature thought illustrated by low scoring responses to metaphor is transductive thinking. Children reason transductively from particular to particular without any clear evidence to support the inference. Elements of situations are juxtaposed without logical references being made between them. It can be seen that metaphors readily lend themselves to transductive reasoning. The low level interpretations of metaphor also had the characteristics of being excessively bound to the real concrete world rather than to the more abstract possible association. Finally, interpretations of poorer quality are global, diffuse and undifferentiated; they lack elaboration of schemata so that interpretations are limited.

In contrast to the immature understandings shown by these low scoring subjects the most sophisticated responses indicate considerable subtlety of interpretation and imagination. The thinking is much more formal operational in nature. Firstly the schemata are highly flexible. The child is able to avoid the distortions of immature thinking, to select relevancies and combine them to stretch meanings away from the obvious. Secondly, schema are sufficiently differentiated for the child to perceive the metaphorical passages on several different levels of meaning leading to a greatly enriched interpretation.

Hypothetico-deductive and propositional thought is seen in the way the child is able to put forward alternative explanations and abstract more generalized statements from data given in the context. Finally, the high-scoring protocols provide many examples of the child's ability to disentangle his experience of the metaphorical passage from the narrowly physical information given, to extend his interpretation on an abstract, imaginative, hypothetical basis.

In short, it can be concluded that a Piagetian theoretical framework is a useful heuristic device for analyzing certain regularities in the nature of the children's verbal response to metaphors they have read. Such an analysis indicates many examples of key Piagetian concepts such as egocentrism, centration, transductive thought, hypothetico-deductive and propositional thinking. Interpreting written metaphor appears to be a highly complex cognitive task for the child since even highly verbal, middle-class children of 11 years expected to be at a formal operational age, revert many times to earlier modes of thought in interpreting metaphors.

IMPLICATIONS

Theoretical Implications

The test of metaphorical understanding the Associated Commonplaces Test constructed from Black's theoretical framework for describing metaphor proved a useful tool in examining children's understanding of metaphor. The study provides some indirect support for Black's explanation of metaphor since the data showed that performance on the Associated Commonplaces Test was highly related to understanding of metaphor measured by free verbalizations and to scores on a test of critical reading and appreciation of literature. The Associated Commonplaces Test was founded on the assumption that a basic process involved in understanding metaphor was the selection of associations of the subsidiary subject of a metaphor and the application, combination and integration of these associations to the main subject of the metaphor. A classification of responses on the Associated Commonplaces Test was based on a hierarchy in which the selection of appropriate associations with an accompanying explanation was the most superior response while the selection of unrelated words was the most inferior response. The notion that there is a hierarchy of responding on the Associated Commonplaces Test was also supported since older children chose more responses at the top of the hierarchy while younger children chose more low level responses. Also there were a number of relationships between high-level responding on the Associated Commonplaces and verbal retrospections. Hence, Black's view that a key part of interpreting metaphor involves selecting, emphasizing and organizing new meanings out of old is given some support by the present study.

This study suggests that the process of reading in relation to metaphorical language can best be conceptualized as a hierarchy of increasingly sophisticated responses. Categorisation of children's responses to metaphor identified three levels of successful reading of metaphor, Translation, Interpretation and Elaboration. The basic level of the hierarchy, translation, is an essential prerequisite to interpretation and elaboration. The child first assigns commonly accepted meanings to what he has read in order to make appropriate Translation responses. He is able, in other words, to elicit from the passage the information which it contains. Having obtained this information, the reader is now able to go beyond the immediate information given and make inferences about it. This type of responding is classified as Interpretation. Interpretive responses include the use of contextual information as well as the use of the associations inherent in the metaphor itself. At the most sophisticated level of the hierarchy, elaboration occurs. The process of elaboration involves the imaginative extension of ideas in the passage through imagery, affect, or further conceptualization. Successful elaboration of a passage allows the reader to intensify the feelings and meanings conveyed by the author by his sensitivity to the author's attitudes and purpose.

The process of reading metaphor necessitates the presence of rich and varied networks of meaning in the reader. The reader then has the task of sifting out irrelevancies of meaning, selecting appropriate meanings and combining meaning to create a new cognitive domain for the metaphorical expression. Such processes may be inferred from the Associated Commonplaces data. In addition, the relationship found to N.C.T.E. Look at Literature scores and other measures of metaphorical understanding suggests that an essential part of reading figurative language is the ability to creatively extend meanings, and to show awareness of literary quality.

The Piagetian analysis of reading responses suggests that among the most mature readers of metaphor there are certain qualities of thinking which contribute to an awareness of literary quality. Flexibility is necessary in order to avoid stereotyped interpretations. The reader must have the ability to see unity between diverse elements. Differentiation of meaning is also needed so that a wide variety of elements are available for selection. Also the reader must be able to transcend the immediate obvious meanings to hypothetical alternatives which can be logically evaluated and to reach the essence of meaning that can be put forward in the form of propositions. In short, formal-operational thinking is required for the reader to carry out the task of interpreting written metaphors to the fullest degree. Moreover, formal-operational thinking in interpreting metaphor probably comes later than for many other cognitive tasks.

Accomplished readers while interpreting some metaphors at a formal operational level may, when confronted with a difficult metaphor, revert to an earlier mode of thinking. In other words, a reader who has reached the formal-operational level of thinking with some metaphors does not necessarily interpret all metaphors at that level.

This investigation, then, tends to support those conceptualizations of the reading process which include a selection-integration organizational component. Stauffer's (1970) view of reading as a form of problem-solving in which relationships are sought, ideas are differentiated and reconciled is quite compatible with the present findings. Similarly Russell's (1970) hierarchy of reading comprension, word identification, general impression of the passage, reading literally, selection and interpretation at beyond a literal level is extremely well fitted to the findings of this study. In other words, this study provides evidence that reading metaphor is a complex process in which the reader is an active participant generating meaning, feelings, and new cognitive structures.

Implications for the Teaching of Reading

Responses eliciting information and inferring from that information from the wider context of the passage appear to be extremely important in the overall interpretation of metaphor. Differentiation of meaning both for the metaphorical statement itself and the supporting context are critical factors in reading metaphor. Too often children will give a global meaning without attending to the specifics within the passage which build up the passage. In other words, their global meaning lacks precision because specific metaphors have not been considered fully nor their effect upon total meaning considered. Children need to be taught to read for supporting detail by discussing, questioning and evaluating metaphors within a wider context. For example, in metaphor 5, where the deeper meaning of "bandaged town" was often ignored for "covered in snow", the contextual information suggesting separation, isolation and protection is relatively rich and this could easily be drawn out in the teaching situation.

As a preliminary to giving a precise meaning of a passage or a specific metaphor, children should be encouraged to translate the passage into their own words. Children who do this are then able to provide more sophisticated meanings both for the passage and the metaphor, than children who attempt to interpret the passage without this first step. After practice sub-translations could be done silently but as a first step the oral translation of responses would be valuable.

The study shows that diversity and multiplicity of meaning is important if mature interpretation of metaphor is to occur. The teaching of language often emphasizes building wide vocabularies without sufficient attention to providing depth of meaning for individual words or concepts. Children should be encouraged to produce a variety of responses to metaphors rather than their immediate, often pedestrian, interpretation. More attention should be paid to teaching about metaphor: what it is, how it works and the writer's purpose in using it. The steps that Black considers important - the building up of associated commonplaces, the selection and the integration of meanings must be taken into account by the teacher in approaching metaphor. The study suggests that although grade 6 and grade 8 children can operate on a representational level, the task of interpreting metaphor is more difficult than one might expect, leading children in some cases to return to earlier modes of thinking.

The explication of various metaphors should also allow children to produce alternative interpretations rather than stereotyped ones. Such specific teaching about metaphor seems necessary because mere exposure is not enough. Children are constantly exposed to metaphor, both in speech and writing, yet often the subtleties and nuances of meaning escape them, as this study showed. Teaching children how to go about obtaining meaning from metaphors and metaphorical passages, seems essential.

The paucity of elaborative, affective responses suggests the need for children to be encouraged to interpret the feelings expressed by metaphorical passages. Connotative meaning is another aspect of meaning to which the recommendations of the previous paragraph also apply. That is children should be encouraged to diverge more often. There is, however, much more difficulty in eliciting affective interpretations from the average pre-adolescent child. The social embarrassment associated with the discussion of emotions and the inhibitions produced by instructions to be imaginative are all too familiar to the teacher. Moreover, affective experience is such a cultural phenomenon that there may indeed be a barrier to be overcome in the Edmonton child grasping Dylan Thomas's world. The barrier, however, is not insurmountable or great literature would not achieve universality.

How may one encourage the average child to experience at least some of the feelings of the writer of metaphor? Perhaps one way to train the child to be sensitive to the feelings of others is to encourage him to express his own feelings. Hence, an environment where the child is encouraged to write in a relatively free atmosphere where the validity of each individual experience is accepted will likely encourage awareness of other experiences and perception of the process of metaphorizing on an affective level.

Suggestions for Further Research

The study should be repeated both with children from different grade levels and different socioeconomic status levels. The system devised in this study for classifying metaphors should be developed and applied to a much wider sample of metaphors. With a greater number of metaphors it is more likely that regularities will appear in data relating the characteristics of metaphor to the nature of responses to metaphor. It is possible that such an analysis could facilitate the development of a series of lessons to teach specific aspects of metaphor, which could be evaluated and tested for effectiveness.

The investigation of children's understanding of metaphor should be carried out in relation to teaching styles and classroom environments. For instance, perhaps children who are encouraged to express themselves in language understand metaphor at a more affective level than children who have less opportunity for free expression in the classroom. It would also be interesting to examine the relation between children's oral use of metaphor in their language and the nature of their response to written metaphor.

Concluding Statement

The findings of this study indicate that most grade 6 and grade 8 children understand metaphorical passages on a conceptual, inferential basis but that few are able to imaginatively extend the meanings of metaphor or respond to them on an affective level. The study showed that children's free verbalizations about metaphor and their ability to select and integrate associated commonplaces for metaphor are related to their critical reading and appreciation of literature.

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APPENDIX A

THE METAPHORS

Metaphor 1

The wave struck the cliff. It sent long tongues streaming around me so that I could neither see nor hear.

The tongues of water licked into all the crevices, dragged at my hand and at my bare feet gripping the ledge.

Knickerbocker, K.L. and Renninger, A.L. Interpreting literature, New York, Holt, Rinehart and Winston, 1969.

Metaphor 2

The little mare had whirled to face them, keeping the colt behind her. With her teeth bared and her ears laid back, she looked half wolf for sure.

Sanders, R. and Rosato, G. New Directions in English, Harper & Row, New York, 1969.

Metaphor 3

The fog comes on little cat feet. It sits looking on harbor and city on silent haunches and then moves on.

Sandburg, Carl, The Fog,

Metaphor 4

The Princess Saralinda was tall, with fresias in her dark hair and she wore serenity brightly like the rainbow. It was not easy to tell her mouth from the rose, or her brow from the white lilac. Her voice was faraway music and her eyes were candles burning on a tranquil night.

Thurber, James The Thirteen Clocks,

Metaphor 5

> And they rang their tidings over the bandaged town, over the frozen foam of the powder and ice-cream hills, over the crackling sea. It seemed that all the churches boomed for joy under my window, and the weathercocks crew for Christmas on our fence.

Thomas, Dylan A Child's Christmas in Wales,

Metaphor 6

> And then they stood on the white welcome mats in the little drifted porches and huffed and puffed, making ghosts with their breath and jogged from foot to foot...

Graham, Kenneth The Wind in the Willows,

Metaphor 7

> The 'poop-poop' rang out with a brazen shout in their ears, they had a moment's glimpse of an interior of glittering plate-glass and rich morocco, and the magnificent motor-car, immense, breath-snatching, passionate, with its pilot tense and hugging his wheel, possessed all earth and air for the fraction of a second flung an enveloping cloud of dust that blinded and enwrapped them utterly, and then dwindled to a speck in the far distance, changed back into a droning bee once more.

Graham, Kenneth The Wind in the Willows,

Metaphor 8

> The two vast iron doors of the Black Gate under its frowing arch were fast closed. Upon the battlement nothing could be seen. All was silent but watchful.

Tolkein, J.R.R. The Lord of the Rings, Methuen, Canada, 1969.
p. 921.

Metaphor 9

They slept a little in uneasy fits; for their sweat grew chill on them and the hard stones bit them, and they shivered. Out of the North from the Black Gate there flowed whispering along the ground a thin cold air.

Tolkein, J.R.R. The Lord of the Rings, Methuen, Canada, 1969, p. 968.

Metaphor 10

She sat at the window watching the evening invade the avenue. Her head was leaned against the window curtains and in her nostrils was the odor of dusty cretonne.

Knickerbocker, K.L. and Reninger, A.L. Interpreting literature, New York, Holt, Rinehart and Winston, 1969.

APPENDIX B

INSTRUCTIONS TO JUDGES

I need your help in evaluating and classifying some metaphors that I intend to use to test children's understanding of metaphor. One of the things that I am interested in investigating is whether qualitative differences in metaphors have an effect on children's understanding of them. I have chosen a number of dimensions which metaphors may be rated along. I am aware that some these dimensions overlap. What I would like to do is to attempt to place my metaphors along these dimensions which I have attempted to operationalize below.

CHOOSE A RATING BETWEEN ONE AND THREE FOR EACH OF THE FOUR DIMENSIONS FOR THE INDIVIDUAL METAPHORS. ONE AND THREE REPRESENT OPPOSITE POLES OF EACH DIMENSION, WHILE TWO SHOULD REPRESENT A NEUTRAL POINT - IN OTHER WORDS, IF YOU RATE A METAPHOR ALONG A DIMENSION AS TWO , THIS WILL INDICATE THAT YOU FEEL THAT METAPHOR IS AT AN INTERMEDIATE POINT BETWEEN THE POLES OF THE PARTICULAR DIMENSION. WHEN YOU RATE THE METAPHOR, IT IS IMPORTANT THAT YOU READ IT CAREFULLY FIRST AND CONSIDER THE METAPHOR WITHIN THE CONTEXT IN WHICH IT IS PRESENTED.

1. SIMPLE ____ COMPLEX

1 2 3

The Simple-Complex Dimension

Simple metaphors are those which can be most easily replaced by a literal phrase without loss of meaning. In terms of Black's views of metaphor, "substitution" or "comparison" metaphors are relatively simple. They have a relatively limited and easily defined set of associations.

Complex metaphors are those which resist translation into literal terms without loss of meaning. They tend to elicit or build fresh or unique concepts with elaborate and extensive meaning. In Black's view, "interaction' metaphors are complex in nature.

2. COMMON ________________________________ UNUSUAL
1 2 3

The Common-Unusual Dimension

Common metaphors are those which are found in fairly constant use in language and do not therefore evoke much surprise in the reader. Unusual metaphors employ unexpected or incongruous juxtapositions which evoke shock or surprise in the reader. They tend to be unique. An important consideration in this dimension is the juxtaposition of frame and focus - the words used may be extremely well known in their ordinary context, but the juxtaposition of frame and focus may be quite disparate. Unusualness lies mainly in the extent to which the comparison is unfamiliar.

3. CONCRETE ________________________________ ABSTRACT
1 2 3

The Concrete-Abstract Dimension

Concrete metaphors are those which evoke associations from the physical world. They rely on sensations, images, perceptions and actions and tend to be fairly specific and definable in concrete terms. Abstract metaphors are more distant from the physical world, involve more interpretation, more generalized meanings, and a greater influence of ideation and conceptualization.

4. CONNOTATIVE ______________________________ DENOTATIVE

1 2 3

The Connotative-Denotative Dimension

A connotative metaphor is one which tends to evoke feelings and subjective impressions to establish an atmosphere of some kind. A denotative metaphor is one which is a shortcut to defining or describing something. It is much less affective and contains much less diverse associations and relies on criterial aspects of meaning. It's emphasis is an accuracy of conveying an impression rather than mood.

1. The wave struck the cliff. It sent long tongues streaming around me so that I could neither see nor hear.

The tongues of water licked into all the crevices, dragged at my hand and at my bare feet gripping the ledge.

SIMPLE ______________________________ COMPLEX

1 2 3

COMMON ______________________________ UNUSUAL

1 2 3

CONCRETE ______________________________ ABSTRACT

1 2 3

CONNOTATIVE ______________________________ DENOTATIVE

1 2 3

2. The little mare had whirled to face them, keeping the colt behind her. With her teeth bared and her ears laid back, she looked half wolf for sure.

SIMPLE ______________________________ COMPLEX

1 2 3

COMMON ______________________________ UNUSUAL

1 2 3

CONCRETE ______________________________ ABSTRACT

1 2 3

CONNOTATIVE ______________________________ DENOTATIVE

1 2 3

3. The fog comes on little cat feet. It sits looking on harbor and city on silent haunches and then moves on.

SIMPLE ______________________________ COMPLEX

1 2 3

COMMON ______________________________ UNUSUAL

1 2 3

CONCRETE ______________________________ ABSTRACT

1 2 3

CONNOTATIVE ______________________________ DENOTATIVE

1 2 3

4. The Princess Saralinda was tall with fresias in her dark hair and she wore serenity brightly like the rainbow. It was not easy to tell her mouth from the rose, or her brow from the white lilac. Her voice was faraway music and her eyes were candles burning on a tranquil night.

SIMPLE ______________________________ COMPLEX

1 2 3

COMMON ______________________________ UNUSUAL

1 2 3

CONCRETE ______________________________ ABSTRACT

1 2 3

CONNOTATIVE ______________________________ DENOTATIVE

1 2 3

5. And they rang their tidings over the bandaged town, over the frozen foam of the powder and ice-cream hills, over the crackling sea. It seemed that all the churches boomed for joy under my window, and the weathercocks crew for Christmas on our fince.

SIMPLE ______________________________ COMPLEX

1 2 3

COMMON ______________________________ UNUSUAL

1 2 3

CONCRETE ______________________________ ABSTRACT

1 2 3

CONNOTATIVE ______________________________ DENOTATIVE

1 2 3

6. And then they stood on the white welcome mats in the little drifted porches and huffed and puffed, making ghosts with their breath and jogged from foot to foot...

SIMPLE ______________________________ COMPLEX

1 2 3

COMMON ______________________________ UNUSUAL

1 2 3

CONCRETE ______________________________ ABSTRACT

1 2 3

CONNOTATIVE ______________________________ DENOTATIVE

1 2 3

7. The 'poop-poop' rang out with a brazen shout in their ears, they had a moment's glimpse of an interior of glittering plate-glass and rich morocco, and the magnificant motor-car, immense, breath-snatching, passionate, with its pilot tense and hugging his wheel, possessed all earth and air for the fraction of a second, flung an enveloping cloud of dust that blinded and enwrapped them utterly, and then dwindled to a speck in the far distance, changed back into a droning bee once more.

SIMPLE ______________________________ COMPLEX
1 2 3

COMMON ______________________________ UNUSUAL
1 2 3

CONCRETE ______________________________ ABSTRACT
1 2 3

CONNOTATIVE ______________________________ DENOTATIVE
1 2 3

8. The two vast iron doors of the Black Gate under its frowning arch were fast closed. Upon the battlement nothing could be seen. All was silent but watchful.

SIMPLE ______________________________ COMPLEX
1 2 3

COMMON ______________________________ UNUSUAL
1 2 3

CONCRETE ______________________________ ABSTRACT
1 2 3

CONNOTATIVE ______________________________ DENOTATIVE
1 2 3

9. They slept a little in uneasy fits, for their sweat grew chill on them and the hard stones bit them, and they shivered. Out of the North from the Black Gate there flowed whispering along the ground a thin cold air.

SIMPLE ________________________________ COMPLEX
1 2 3

COMMON ________________________________ UNUSUAL
1 2 3

CONCRETE ________________________________ ABSTRACT
1 2 3

CONNOTATIVE ________________________________ DENOTATIVE
1 2 3

10. She sat at the window watching the evening invade the avenue. Her head was leaned against the window curtains and in her nostrils was the odor of dusty cretonne.

SIMPLE ________________________________ COMPLEX
1 2 3

COMMON ________________________________ UNUSUAL
1 2 3

CONCRETE ________________________________ ABSTRACT
1 2 3

CONNOTATIVE ________________________________ DENOTATIVE
1 2 3

APPENDIX C

THE INTERVIEW

Whenever we read a story we not only find what happened but we also get a feeling about the story. If we say of a girl - "Her voice was like faraway music" we get a feeling for what her voice was like. Her voice was probably soft and pleasant to listen to even though we wouldn't expect it to sound exactly like a piano or a violin. When we are told that her voice is like far away music we get a feeling for the girl's voice, and if we think hard we can almost see what kind of person would have a voice like that. It certainly wouldn't be a big, rough, clumsy person would it? What kind of person do you think might have a voice like faraway music?

In the same way if we say that someone is "as cunning as a fox", we not only are told what sort of person he is but also how the speaker feels about the person he is describing. A fox is an animal that sort of sneaks around and steals chickens. It's clever but it's also sneaky. So if we say that a person is as cunning as a fox, we mean that he's not only clever, but also not to be trusted. What do you think that cunning as a fox means?

Now let's read this passage. "Darkness oozed out from beneath the trees, through the maze of creepers from behind the unstirring trees." We know that this is about getting dark but if we read it carefully we know how it's getting dark. What sort of feeling do we get from it? It's not like getting dark in Edmonton is it? The writer has used words like "oozed" and "unstirring" to give us a kind of feeling - it makes a picture in our mind. What sort of picture do you get?

Now here's another passage. "It was a cold afternoon with a hard steely sky overhead--". What is the passage about? Shut your eyes and tell me what kind of pictures you see in your mind about this passage?

APPENDIX D

THE ASSOCIATED COMMONPLACES TEST

Instructions for Associated Commonplaces Test

There are some words in this list that go best with the word tongue. Chose the word or words you think best go with "tongue" the way it has been used in this passage. Tell me why you choose the words you do. If you can't s-e any words that fit, say so.

1. TONGUE - foreign
moist
curving
tapering
pink
muscular
projecting
swallow
taste
chatter

2. WOLF - wild
starving
hunt
furry
prey
greedy
devour
fierce
protect
fight

3. CAT FEET - claws
scratch
pad
soft
silent
graceful
spiteful
jump
slinking
furry

4. CANDLES - waxy
warm
glow
bright
single
flicker
flame
cylindrical
light
snuff out

5. BANDAGED - sickness
healing
white
snug
wrapping
pain
blood
injured
enclosed
hospital

6. GHOSTS - scary
white
dark
spirit
cloudy
death
haunt
shape
frosty
misty

7. POSSESSED - owned
occupied
seized
desired
dominate
property
energy
hold
wealth
have

8. FROWNING - scold
gloomy
father
think
concentrate
disapproval
furrows
brow
defiance
sulky

9. BIT - sharp
food
teeth
cut
chew
piece
snap
wound
pain
mouth

10. INVADED - army
enter
attack
fight
overcame
penetrate
battle
conquer
destroy
spread

APPENDIX E

THE LOOK AT LITERATURE TEST

PART I

Directions

You will be asked to read some poems and stories and answer a few questions after each one. The questions will usually ask about your reactions or about what the writer did, and not about what you remember. Always choose what you think is the best of the four answer choices given for each question. Be sure to go back to the poem or story if you need to or want to.

In this first part, the poems and stories will be read aloud to you while you follow along reading silently. The questions will also be read to you, but you will answer them on your own.

STOP. Do not read the example poem and questions until you are told to. Do not mark an answer until you are told to.

Example selection

Daniel Boone at twenty-one
Came with his tomahawk, knife and gun
Home from the French and Indian War
To North Carolina and the Yadkin shore.
He married his maid with a golden band,
Builded his house and cleared his land;
Line 7 But the deep woods claimed their son again
8 And he turned his face from the homes of men.

"Daniel Boone," from *I Sing the Pioneer*, by Arthur Guiterman. Copyright 1926, by E. P. Dutton.

E1 What does the poet want you to picture when you read that Daniel "turned his face from the homes of men" (line 8)?

- **A** Daniel going into unsettled lands
- **B** Daniel ignoring some of his neighbors
- **C** Daniel searching to find someone
- **D** Daniel being embarrassed or angry

E1____

E2 What do you think line 7 means?

- **F** Daniel lost another baby son.
- **G** Daniel felt the need to move on.
- **H** Daniel got lost in the forest.
- **J** Daniel fought with more Indians.

E2____

STOP. Do not turn this page until you are told to.

Selection 1

"And I'm *not* scared neither," growled Obediah. "I kin do what I please and nobody dast stop me. I done what I pleased last summer and nobody dasted to stop me. Nobody dasts to stop me now." He set his bearskin cap straight on his head and looked at the teacher with defiant eyes. The teacher looked back at Obediah. She was a small woman, and now she was pale and trembling. It was a breathless moment. Even the youngest children knew instinctively that something was at stake. In a moment more they would find out whether Miss Parker or Obediah would rule the school this year.

Obediah began to grin—a slow, spreading grin. He pushed back his cap and spat contemptuously on the schoolroom floor. Then something polite and ladylike in Miss Parker snapped. She caught Obediah by the back of the neck with a suddenness that took him completely off his guard. Down the aisle she marched him to the front of the room.

From *Caddie Woodlawn,* by Carol Ryrie Brink. Copyright 1935, by the Macmillan Company.

1 "Something polite and ladylike in Miss Parker snapped." This means that suddenly she

A was injured.
B became angry.
C felt ashamed.
D felt weak.

1 _____

2 Why do you suppose the author says that Miss Parker is a small woman?

F To let you know that she is a young teacher
G To hint to you that Obediah is a small boy
H To surprise you by what happens at the end
J To have you think that she doesn't rule the school

2 _____

3 Obediah "set his bearskin cap straight on his head." This gives us a hint that he

A cared about how neat he looked.
B expected the cap might fall off.
C was ready for what might happen.
D didn't want to be in school.

3 _____

4 Why did Obediah grin?

F He thought Miss Parker looked funny.
G He felt ashamed of what he had said.
H He wanted the other pupils to laugh.
J He thought he had won the battle.

4 _____

Selection 2

The illustrious dragon of England and Wales
Has two awful heads and eleven long tails
And nine thousand, nine hundred, ninety-nine scales
  And spangles and warts without measure.

The king and the queen are as proud as can be.
They often invite him to join them for tea.
No land has a dragon as awful as he;
  They think him a National Treasure.

Wherever he wanders there follows a crowd
Of jubilant citizens, equally proud,
Delightedly singing his praises aloud
  And paving his pathway with flowers.

"You may search high and low, near and far, everywhere,
And find a few demons to give you a scare,
But none of them awful enough to compare
  With ours—
    With ours—
      With OURS!"

"The Celebrity," by Edgar Parker. From *Stuff and Nonsense*, by Edgar Parker. Copyright 1961. Reprinted with the permission of Random House, Inc.

5 Why do you think the king and queen are proud of such a dragon?

A He's more awful than dragons in other countries.
B He protects them from other dragons and demons.
C He visits them at their palace.
D He sings for the crowds of people.

5 ____

6 Which expression seems to describe this particular dragon best?

F He's a wolf in sheep's clothing.
G His bark is worse than his bite.
H He has a chip on his shoulder.
J He's hungry enough to eat a horse.

6 ____

7 Which one of these words in the last stanza best shows how the people feel about the dragon?

A "search"
B "demons"
C "awful"
D "ours"

7 ____

8 This poem makes you chuckle mainly because terrible dragons really

F hate flowers.
G don't have two heads.
H shouldn't be loved.
J don't like tea.

8 ____

Go on to the next page.

Selection 3

Line 1 The world turns softly
2 Not to spill its lakes and rivers.
3 The water is held in its arms
4 And the sky is held in the water.
5 What is water,
6 That pours silver,
7 And can hold the sky?

"**Water**," from *Poems by a Little Girl*, by Hilda Conkling. Copyright 1920, 1948 by Hilda Conkling. Published by J. B. Lippincott and reprinted with permission from the publishers.

9 You know that the world doesn't really have arms. Which of these does the author most likely have in mind in line 3?

- **A** The world reaches out to the water.
- **B** The world is mostly lakes and rivers.
- **C** The world protects water like a mother.
- **D** The world doesn't turn softly enough.

9 ____

10 What is the best answer to the question in lines 5, 6, and 7?

- **F** Water is like silver.
- **G** Water is hydrogen and oxygen mixed.
- **H** Water is a strange liquid.
- **J** There isn't one best answer.

10 ____

11 When you read line 4, the writer wants you to imagine that water is like a

- **A** bowl.
- **B** mirror.
- **C** cloud.
- **D** fountain.

11 ____

C

Selection 4

The barn was very large. It was very old. It smelled of hay and it smelled of manure. It smelled of the perspiration of tired horses and the wonderful sweet breath of patient cows. It often had a sort of peaceful smell—as though nothing bad could happen ever again in the world. It smelled of grain and of harness dressing and of axle grease and of rubber boots and of new rope. And whenever the cat was given a fish-head to eat, the barn would smell of fish. But mostly it smelled of hay, for there was always hay in the great loft up overhead. And there was always hay being pitched down to the cows and the horses and the sheep.

The barn was pleasantly warm in winter when the animals spent most of their time indoors, and it was pleasantly cool in summer when the big doors stood wide open to the breeze.

From *Charlotte's Web*, by E. B. White. Copyright 1952, by Harper & Row.

12 The writer wants you to feel that he is writing about something

F real and ordinary.
G mysterious and strange.
H exciting and changeable.
J unusual and hard to imagine.

12 ____

13 A person can do several things to write in an interesting way. In this description, which one of these does the writer NOT do?

A He writes sentences of different lengths.
B He repeats certain words and phrases.
C He makes some words have several meanings.
D He uses words that describe details.

13 ____

14 You need more than your nose to sense a smell of

F manure.
G peace.
H fish.
J rope.

14 ____

Go on to the next page.

Selection 5

Line 1 I'm a lean dog, a keen dog, a wild dog, and lone;
2 I'm a rough dog, a tough dog, hunting on my own;
3 I'm a bad dog, a mad dog, teasing silly sheep;
4 I love to sit and bay the moon, to keep fat souls from sleep.

5 I'll never be a lap dog, licking dirty feet,
6 A sleek dog, a meek dog, cringing for my meat;
7 Not for me the fireside, the well-filled plate,
8 But shut door, and sharp stone, and cuff, and kick, and hate.

9 Not for me the other dogs, running by my side,
10 Some have run a short while, but none of them would bide;
11 O mine is still the lone trail, the hard trail, and best,
12 Wide wind, and wild stars, and the hunger of the quest!

"Lone Dog," from *Songs to Save a Soul,* by Irene Rutherford McLeod. Reprinted with permission of the Viking Press, Inc.

15 Which lines best show how the dog feels about being with people?

A Lines 1 and 2
B Lines 7 and 8
C Lines 9 and 10
D Lines 11 and 12

15 ____

16 If this dog were a person, which would he most likely be?

F A pirate
G An athlete
H A storekeeper
J A zookeeper

16 ____

17 Suppose that line 8 had been lost. Which would be the best one to take its place in this poem? Think about the meaning and the sound of the line.

A "But closed door, and smooth stone, and pat, and nudge, and hate."
B "But slammed door, and thrown stone, and hit, and shove, and hate."
C "But door slammed in my face, and stone, and cuff, and kick, and hate."
D "But latched door, and sharp stone, and cuff, and slap, and frown."

17 ____

18 How does the dog in the poem feel about sleek and meek dogs (line 6)?

F That they are lean and rough
G That they are not really friendly dogs
H That he doesn't want to be like them
J That he would like to fight with them

18 ____

f

Selection 6

"I like the reading most of all," he went on, the words tumbling over themselves in his eagerness. "In my school I am the best in reading. And I am the first in my family to learn to read." He said this proudly, and paused to see whether the Merkin lady was impressed.

She was eyeing him thoughtfully. "That is a great responsibility."

Raman had already opened his mouth to say more, but he stopped and closed it instead, disappointed. He had expected her to say more than that, to show more admiration.

"I am going to be a great scholar some day," he continued after a moment. "I shall read many, many books. And I shall own the books myself. Shelves and shelves of them. I want to learn many things."

"Good," the Merkin lady nodded. "And then what?"

From *What Then, Raman*, by Shirley Arora. Copyright 1960, by Follett Publishing Company.

19 How do you think the Merkin lady feels about Raman?

A She feels sorry for him.
B She feels angry at him.
C She feels proud of him.
D She feels friendly to him.

19 ____

20 Which of these comes closest to what Raman expected the lady to say?

F "Yes, reading is important, but what about writing?"
G "It's exciting to be the first to do something new."
H "Your family must have made it hard for you."
J "That's wonderful. I'll bet you are a fine reader."

20 ____

21 Raman says, "And I shall own the books myself." Why is this so important to him?

A He doesn't have any books now.
B His hobby is collecting books.
C He doesn't like to use libraries.
D He knows that books are worth money.

21 ____

Go on to the next page.

Selection 7

Line 1 In the soft dark night
2 when the wind is still
3 and bullfrogs croak
4 at the bottom of the hill,
5 the fireflies reach
6 inside their coat pockets
7 and screw little light bulbs
8 into their sockets,
9 so they can fly
10 through the night and play
11 without bumping their heads
12 or losing their way.

"Fireflies," by Aileen Fisher, from *Up a Windy Hill*. Copyright 1953, Scott, Foresman Company. Reprinted with permission of The World Publishing Company.

22 Which of these phrases best shows that this poem is supposed to be amusing rather than thoughtful or mysterious?

F "wind is still and bullfrogs croak"
G "inside their coat pockets"
H "can fly through the night"
J "losing their way"

22 ____

23 The writer speaks of fireflies as though they are people. Which pair of lines shows this best?

A Lines 1 and 2
B Lines 5 and 6
C Lines 9 and 10
D Lines 11 and 12

23 ____

24 What makes lines 7 and 8 seem funny to you?

F Fireflies don't have as much light as light bulbs do.
G Fireflies don't need light in order to fly and play.
H Fireflies do fly, but they don't lose their way.
J Fireflies don't really have light bulbs and sockets.

24 ____

25 People often notice something special and write about it. What do you think this writer especially noticed about fireflies?

A Their lights
B Their shapes
C Their wings
D Their heads

25 ____

STOP. Do not go on to Part II until you are told to.

PART II

Directions

In this part nothing will be read to you. Instead, you will read the selections and answer the questions on your own. Be sure to mark what you think is the best of the four choices given for each question. If you want to go back to the poem or story, by all means do so.

Continue to mark your answers as you did in Part I.

Selection 8

Tip tap tip tap tip tap tip tap stamp.

This time it was so regular that only silly people would think it was rats. They might think it was a robin breaking a snail shell or a woodpecker working at tree bark. Max knew it was none of these.

He knew quite well what it was, and in a minute he would get up, if he could without making a creak, and look at them. Should he call Jane, perhaps, while it was going on, and tell only her? Just Jane.

She would have to believe it if she saw it.

But if she made a noise, they might freeze (they would), and she would laugh at him and call him batty.

His heart felt big with such a thrilling secret inside it.

He didn't know how not to tell someone.

But of course, once he had told, then it would no longer be his secret. There would be the job of telling, of showing Jane, of proving it, and then there would be Jane wanting to join in everything and enjoy it too.

As stealthily as an animal, he stood, turned, knelt by the attic door and put one sparkling gray eye to the keyhole.

There they were. Three rows of four. Drilling.

It was funny to see them drilling so smartly in such shabby uniforms. There was scarcely any paint left. It must have been scarlet once. Perhaps if they trusted him, they would let him paint them. Give them a new coat of paint. Max grinned. This was exactly right.

Adapted from *The Return of the Twelves*, by Pauline Clarke. Copyright 1962, by Pauline Clarke.

26 Which sentence shows most clearly that Max was having trouble making up his mind what to do?

- **F** "This time it was so regular that only silly people would think it was rats." (line 2)
- **G** "His heart felt big with such a thrilling secret inside it." (line 11)
- **H** "But of course, once he had told, then it would no longer be his secret." (line 13)
- **J** "Perhaps if they trusted him, they would let him paint them." (line 22)

26 ____

27 Why do you think the author waits until line 18 before he has Max look through the keyhole?

- **A** So that you will know the secret before Max does
- **B** So that you can see that Max isn't silly
- **C** So that Max can decide whether or not to tell Jane
- **D** So that you will keep wondering what is going on

27 ____

28 How does the author tell you that Jane is someone special to Max?

- **F** "Should he call Jane, perhaps, while it was going on, and tell only her? Just Jane." (lines 6–7)
- **G** "She would have to believe it if she saw it." (line 8)
- **H** "But if she made a noise, they might freeze (they would), and she would laugh at him and call him batty." (lines 9–10)
- **J** "But of course, once he had told, then it would no longer be his secret." (line 13)

28 ____

29 When Max moves "as stealthily as an animal" (line 17), you should picture him moving as

- **A** eagerly as a squirrel.
- **B** quietly as a cat.
- **C** nervously as a chicken.
- **D** quickly as a bird.

29 ____

Selection 9

"Can I borrow a cup o' sugar, ma'am?" inquired Mrs. Slater.

"Shore can!" said Mrs. Boyer heartily. "Ary time you need somethin', you call on me and welcome. That's what neighbors is for. Mighty nice to be near enough for neighborin'."

They sat down stiffly. An awkward silence fell.

"We had sich a heap o' work to do, to git this ole place fixed up," began Mrs. Boyer. "We ain't what you might call settled yet. Them Roddenberrys . . ."

"They got froze out in the Big Freeze," said Mrs. Slater. "They went back to wherever it was they come from. All their orange trees got bit back to the ground by the frost. Ain't no use messin' with oranges here. Hit's too cold in the wintertime."

"But the trees were seedlings," said Mrs. Boyer, "and they've come up again from the roots. When we git 'em pruned good and the moss cleaned out, they'll make us a fine grove."

From *Strawberry Girl*, by Lois Lenski. Copyright 1945, by J. B. Lippincott Company.

30 The two ladies sat down stiffly and were silent because

- **F** Mrs. Slater was surprised by Mrs. Boyer's friendliness.
- **G** Mrs. Slater was embarrassed that she had to borrow.
- **H** they did not know each other very well.
- **J** they disagreed about the orange crop.

30 ____

31 When Mrs. Boyer mentions the Roddenberrys, she seems to be saying that

- **A** she is glad that they have moved away.
- **B** she blames them for the mess her house is in.
- **C** she is sorry that they had bad luck with the oranges.
- **D** she realizes that they weren't very good neighbors.

31 ____

32 Mrs. Boyer seems to be a

- **F** cheerful person.
- **G** helpless person.
- **H** nosy person.
- **J** lazy person.

32 ____

Go on to the next page.

Selection 10

It happened this way. Papa was much older than Mama. He was
thirty-five when he met Mama and up till then he had not had a
minute to get married because all he thought about was birds, birds,
Line 4 birds. Already, he was a quite famous bird man. Well, one day Papa
happened to be standing in a New York subway station. In this particular subway station there was an escalator and all of a sudden Papa
decided to see if he could run up the escalator, not the "up" escalator,
the "down" one. He would have to run pretty fast to beat the stairs
that were trying to bring him back downwards. Papa said he had
always wanted to try this but naturally he did not want to make a fool
of himself in front of other people of whom there were plenty in New
York. This time, however, there weren't any other people around and
13 it was a splendid opportunity. So. Up he flew, several steps at a time,
and he did manage to reach the top.

It so happened that when, panting, Papa did reach the top, there
was a certain young girl who was about to come down the escalator;
and here Papa came racing up it so fast, he couldn't help it. He
knocked the young lady down. Now this girl happened to be Mama
who had come to the city for the opera matinee. The opera was
20 *Tannhäuser,* the first she had ever seen, and she was floating through
21 the air, almost, she was so transported by the magnificent music,
when all of a sudden she landed flat on her back, knocked over by
this crazy man who was flying up the "down" escalator.

Well, of course, since Mama was such a young little thing and wore
only a size two shoe, and, moreover, ate like a bird, Papa had to marry
her. They fell in love at first sight.

From *Ginger Pye,* by Eleanor Estes. Copyright 1951, by Harcourt, Brace and Company.

33 We learn (line 4) that Papa was "a quite famous bird man." What do we read later in the story that makes this funny?

- **A** Mama "wore only a size two shoe".
- **B** Papa had to "run pretty fast to beat the stairs".
- **C** Mama "was floating through the air".
- **D** Papa "knocked the young lady down".

33 ____

34 "She was floating through the air" (lines 20-21) suggests that Mama

- **F** was falling down the escalator.
- **G** was daydreaming about the opera.
- **H** was knocked through the air by the man.
- **J** was very much in love with Papa.

34 ____

35 The author wants you to

- **A** feel sorry for Mama.
- **B** laugh about the story.
- **C** learn about politeness.
- **D** think Papa is crazy.

35 ____

36 The sentence "So." in line 13 suggests that Papa was thinking something he didn't say. What was he thinking?

- **F** "People might laugh!"
- **G** "The escalator had better not stop!"
- **H** "I could change my mind!"
- **J** "It's now or never!"

36 ____

Selection 11

Two men were walking along a road together when one of them saw an axe lying on the ground. He picked it up and said, "Look, I have found an axe."

"Don't say, 'I have found an axe'," said the second Traveler. "Say, 'We have found an axe,' because since we are companions, we should share it."

"No, no," said the first one, "this is all mine."

They had gone only a little farther on when up came a big rough-looking man. Anyone could see he was the owner of the axe, and he was angry.

Line 11 "Oh-oh!" said the Traveler with the axe, "Now we are in trouble."

"You're wrong," said the second Traveler. "You should say, 'Now I am in trouble.' You wouldn't share the prize, so I won't share the danger. Goodbye."

"The Travelers," adapted from *Aesop's Fables*

37 Why doesn't the author tell more about where and when this story happened?

- **A** It could happen anywhere, anytime.
- **B** It happened too long ago to matter.
- **C** Stories should be a little mysterious.
- **D** Details aren't usually interesting.

37 ____

38 Which word best describes the Traveler who found the axe?

- **F** stupid
- **G** cheerful
- **H** selfish
- **J** tough

38 ____

39 When the Traveler with the axe says, "Now we are in trouble," (line 11), this shows us that he

- **A** is looking for help.
- **B** is planning to escape.
- **C** never does things alone.
- **D** always shares everything.

39 ____

40 Which pair of words holds the key to the meaning of this story?

- **F** Traveler and owner
- **G** axe and danger
- **H** I and we
- **J** angry and trouble

40 ____

Go on to the next page.

Selection 12

This is my rock,
Line 2 And here I run
To steal the secret of the sun;
  This is my rock
  And here come I
  Before the night has swept the sky;
This is my rock,
This is the place
I meet the evening face to face.

"This is My Rock," from *Far and Few*. Reprinted with permission of Little, Brown and Company.

41 Which of these is most likely "the secret of the sun"?

A Where it goes in the evening
B How truly hot it is
C How it makes things grow
D When and where it was created. **41** ____

42 If you wanted to have the same feeling but had no rock to go to, which of these would be the best to do?

F Watch a TV program about the sun.
G Get a rock small enough to carry.
H Talk with a friend about nature.
J Go to a quiet place out of doors. **42** ____

43 The word "run" in line 2 is used to hint that the speaker is

A athletic.
B eager.
C scared.
D restless. **43** ____

Selection 13

Oliver began putting his paint things away. It was dusky in the big room. The skylight glowed with a pale reflection of city lights, and the fire had burned to embers in the grate. Outside the rain whispered and murmured against the glass, as though the air were full of secrets. Rush went back to the piano, playing softly, absent-mindedly, thinking about his Saturday and the way he would use it. Mona lay face down on the sofa, and Randy sat cross-legged on the hearthrug. They were thinking too.

From *The Saturdays*, by Elizabeth Enright. Copyright 1941, by Holt, Rinehart and Winston.

44 If you were the fifth person in the room, what should you be doing in order to fit in best with the situation?

F Concentrating on writing a letter
G Doing cartwheels on the floor
H Glancing at some pictures
J Talking about Rush's piano-playing

44 ____

45 What is the rain compared to?

A A light
B A secret
C A voice
D A song

45 ____

46 The author wants you to get a feeling of waiting for something to happen. Which phrase from the paragraph does the most to build this feeling?

F "as though the air were full of secrets"
G "glowed with a pale reflection of city lights"
H "playing softly, absent-mindedly"
J "outside the rain whispered"

46 ____

F

Go on to the next page.

Old Stormie, he was called. Old Stormie was the kind of man who would go overboard with a knife in his teeth, in the North Atlantic, just to see why the men couldn't hoist anchor. Once when this happened there was such a churning and heaving of rough water under the ship that even the old hands got seasick. After this had gone on for fifteen minutes Old Stormie popped his head up and yelled, "Haul 'er in, boys."

So the sailors hoisted the anchor, and when Old Stormalong climbed aboard he explained, "Octopus. Four arms grabbin' the anchor, four arms grabbin' the bottom."

"What you do to him?" the sailors asked.

"Nothin' much," said Stormalong, "just tied up all his arms in double carrick bends. Take 'im a month to get the knots out."

The *Courser* was so big she couldn't sail up Boston Harbor, so big that all the men on watch had to ride horseback. Her mast tips disappeared into the clouds and were hinged so that they could be lowered to let the sun and moon go by. She was a deep-water ship, all right. No harbor in the world could take her. Old Stormalong himself was the only man strong enough to handle the wheel.

The only time the *Courser* ever went through the English Channel, Stormalong ordered the men to soap the sides. She slipped through all right, but it was such a tight squeeze the cliffs of Dover scraped all the soap off her starboard side; they have been white ever since.

"Old Stormalong," by Maria Leach from *The Rainbow Book of American Folk Tales and Legends*. Copyright 1958, by The World Publishing Company.

47 In the first paragraph, which of these hints that Stormie was an unusual person?

A He wanted to find out what was wrong with the anchor.
B He stayed down there working for fifteen minutes.
C He popped his head out of the water and yelled.
D He told the sailors to haul in the anchor instead of bringing it up himself.

47 ____

48 The way Stormie answers the sailors' question (paragraph 4) shows that he expects the men

F not to be surprised by his report.
G to give him more help the next time.
H to say they can't believe it.
J to tell the other sailors.

48 ____

49 The author tells about lowering the masts to let the sun and moon go by. Which of these ideas is most like the one about the masts?

A Stormie going overboard with a knife between his teeth
B the old hands getting seasick from the rough water
C the sides of the ship being soaped by the men
D Stormie tying the arms of the octopus into knots

49 ____

50 Some 5th graders were asked to write comments about this tale. Which statement shows that a student DIDN'T know what makes this a good story?

F "There were quite a few surprising details about the ship and the events."

G "When problems came up, the sailors didn't know what to do, but Stormie did."

H "Some things happened on the voyage that you can't really believe."

J "The men used slang and incomplete sentences, but they shouldn't have."

50 ____

If you finish before time is called, look over your work on this part. Do not go back to Part I.

APPENDIX F

CONSTRUCTIONS OF FIGURES 5 AND 6

Figures 5 and 6 are based on the judges of ratings of metaphor as seen in Table 22. The horizontal axis for figure 4 is the common-unusual dimension. The scale represented by the horizontal axis consists of 0 to 10 ordering with 0 in this case indicating the most common metaphors and 10 indicating the most unusual metaphors. The vertical axis is the simple-complex dimension. The scale represented by the vertical axis consists of 0 to 10 ordering with 0 being most simple and 10 being most complex.

The table below shows how scale of judges agreements for each metaphor along each dimension correspond to the points on the 0 to 10 scale for purposes of figure 5 and figure 6.

		Judges Ratings*	
0	Simple	100%	0%
1		90	10
2		80	20
3		70	30
4		60	40
5		50	50
6		40	60
7		30	70
8		20	80
9		10	90
10	Complex	0	100

		Judges Ratings	
0	Common	100%	0%
1		90	10
2		80	20
3		70	30
4		60	40
5		50	50
6		40	60
7		30	70
8		20	80
9		10	90
10	Unusual	0	100

* Hence if 100% judges rated a metaphor as simple and 0% rated it complex it would be placed as 0 on the simple-complex dimension as it appears on Figure 5.

		Judges Ratings	
0	Abstract	100%	0%
1		90	10
2		80	20
3		70	30
4		60	40
5		50	50
6		40	60
7		30	70
8		20	80
9		10	90
10	Concrete	0	100

		Judges Ratings	
0	Denotative	100%	0%
1		90	10
2		80	20
3		70	30
4		60	40
5		50	50
6		40	60
7		30	70
8		20	80
9		10	90
10	Connotative	0	100